

TECHNICAL REPORT

Assessment of Trade in Computer Services in Egypt in Relation to the GATS

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Executive Summary

In this report we assess trade in computer services in Egypt and determine whether Egypt should undertake binding obligations in the World Trade Organization's (WTO) General Agreement on Trade in Services (GATS) in the area of computer services. Egypt is already a member of the WTO Basic Telecommunication Agreement and the Information Technology Agreement. Making computer services commitments in the WTO would complement these efforts and would further assure the Egyptian private sector and the international business community that Egypt is committed to a competitive information technology sector, both as an end product and as an input into the provision of other goods and services.

GATS is a flexible agreement allowing regulators the right to regulate and providing countries access to service-provider markets worldwide. Commitments to "market access" and "national treatment" are negotiated through a country's schedule of commitments. Egypt's trading partners are seeking binding commitments on the category of computer and related services in the schedule of commitments. Computer services are one of the most committed sectors under the WTO. So far, more than 70 countries have made commitments in the sector.

The computer services sector in Egypt is strong and healthy, exporting to countries within and outside the region, operating with few restrictions and no sector-specific legal protections in place, and proving less affected by local and global recessions than other sectors. While the Egyptian computer services market is one of the smallest in the region, it is expected to enjoy steady growth and already contributes 8 times every 1 dollar injected into the economy by the industry. Egypt could become a regional hub for some types of computer services.

Because Egypt's computer services sector is already open, vibrant, and economically healthy, we anticipate no immediate substantial economic impact, positive or negative, from binding commitments. In other markets where computer services commitments were part of an overall information technology (IT) strategy, binding GATS commitments have coincided with sustained growth in domestic computer services markets. Such commitments have not harmed any local computer services market. In fact, in the long term, the inflow of capital—due in part to GATS commitments—could benefit the sector. The sector will have assurance of sustained access to vital international resources and

knowledge and will face no major legal changes. Investment, temporary entry, and tax restrictions can be, and already have been, maintained. In addition, a commitment may prevent Egypt from developing discriminatory policies at some point in the future, positions Egypt to negotiate legally binding commitments from its trading partners, and reassures foreign investors that Egypt intends to maintain an open market.

In sum, because Egypt's computer services market is already open, it offers an easy bargaining chip in WTO negotiations. Other countries want Egypt to bind the sector and it will cost Egypt very little to do so.

We therefore recommend that Egypt make commitments under the GATS for trade in computer services, binding its commitments at the highest level possible (full computer services, and related sectors such as management consulting, adult education [training] and related telecommunications services). We also recommend that Egypt make the deepest commitments possible, offering full market access and national treatment (except in sectors preserved in the horizontal commitments that maintain existing Egyptian law regarding land acquisition and movement of personnel). Egypt should create its own submission of requests in this area and pursue commitments from other markets to benefit Egypt's exporters of computer services.

In addition, Egypt should develop a comprehensive agenda for trade in information technology, evaluating further effects of the GATS, GATT, TRIPs, and e-commerce discussions on Egypt's IT sector, undertaking appropriate obligations and requesting other countries to do the same to benefit Egypt's IT sector. Part of the agenda should be to review complementary policies, including streamlining administrative procedures and initiating further improvements to the telecommunications sector, which would further improve the computer services sector's competitiveness.

1. Introduction

The purpose of this study is to assess trade in computer services in Egypt and determine whether Egypt, as a member of the World Trade Organization (WTO), should undertake commitments under the General Agreement on Trade in Services (GATS) for computer and related services. Egypt's current GATS schedule-of-services commitments do not include commitments in computer and related services. Egypt does not have computer services laws and regulations in place that would prevent it from undertaking a full, legally binding obligation to maintain an open computer services sector, although Egyptian law does contain general restrictions on trade in services. Limitations such as restrictions on land acquisition and restrictions on temporary entry of personnel can be preserved under the GATS mechanism. Therefore, GATS commitments on computer and related services would not need to affect existing labor or investment laws. However, GATS obligations would prevent new restrictions on movement of personnel or investment in the computer and related services sector (or any sector covered in the schedule of commitments).

This report begins with background information on computer services and GATS. It then profiles the economic and business environments for computer services in Egypt, outlines the legal effects of possible Egyptian computer services commitments, and summarizes the potential impact on Egypt of making GATS commitments in the sector. Finally, the report makes recommendations for improving the policy environment of the computer services sector.

2. Profile of Global Computer Services Sector

In determining whether Egypt should make commitments in computer services, it is important to understand not only the political environment, but also global and regional trends in the sector, the industry structure globally, the Egyptian computer services industry, and the Egyptian industry vis-à-vis those of its trading partners. This section is intended to provide a foundation of basic information on technology trends in the computer services sector, and, to the extent it is useful, trends in the broader IT and Information Communication Technology (ICT) sectors. For purposes of this report, the IT sector refers to hardware, software, and computer services; the ICT sector refers to the IT sector plus telecommunication-related goods and services; and the terms “IT services” and “computer services” are used interchangeably. This foundation will help Egyptian decision makers understand Egypt’s computer services sector in the contexts of global and regional markets.

Importance of Computer Services in the Economy

Computer services affect all aspects of business and the economy, at the enterprise level as well as the societal level. Benefits for commercial enterprises include productivity and efficiency gains and cost savings. Software and computerization can streamline a manufacturing process. Farmers can obtain up-to-date information about prices for commodities on the Internet. Computers to forecast weather can help a farmer plan planting and harvesting. Online computer services can find and summarize information for farmers and manufacturers. People can conduct many business transactions more efficiently electronically than in person or over the phone. And providers of specialized computer services can help groups of farmers or other parties maximize resources and use IT efficiently.

Wider access to communications has societal benefits, encouraging the democratization of society politically and economically. Politically, citizens have access to more information and can vote or otherwise express their opinions knowledgeably. In the commercial arena, societal gains from use of computer services include competition among businesses and

entrepreneurship and therefore accelerated innovation and economic development, as well as job creation as job seekers look for higher paying industries. Furthermore, small and medium businesses and individuals can see their skills equalized against those of larger companies and their products and services become available to global markets.

Because computer services enhance productivity and competitiveness they increasingly drive economic growth (or decline). The fall of technology stocks in the United States and the resulting economic downturn (and decline in IT spending) illustrate this point.

Nathan Associates/ Sallstrom Consulting¹ in a recent analysis established a positive relationship between IT spending growth and GDP growth. The study found that for every 10 percent increase in the growth rate of spending on IT goods and services, the growth rate of GDP increases 13 percent. The study also demonstrated that IT sector growth is driven by growth in software and computer services, which are much more dynamic segments than the hardware segment.

Further research on the software segment created a more sophisticated economic model and also showed positive results. (This research has not yet been published.) The data for the software sector show that countries with higher IT infrastructure investment (7.5 percent of total capital) have better economic performance than countries with lower IT infrastructure investments (2.1 percent of total capital). The types of IT capital investments differ in countries with more sophisticated IT infrastructure compared to those with less sophisticated IT infrastructure. In countries well invested in IT capital, the hardware share of total IT investment is 36.3 percent, and the commercial software share of total IT investment is 21.5 percent. Currently, in countries underinvested in IT capital, most of total annual IT investment is in hardware (62.2 percent) and the least is in software (13.3 percent).

Furthermore, the study found that software helps drive growth. By 2006, as countries increase IT investment, most countries that currently under invest in IT will devote less investment to hardware and more to commercial software. This impact is even more dramatic when services are added to the software mix.

Other studies confirm the direct benefits of IT to the economy. Costa Rica, in its paper to the WTO on computer services (S/CSS/W/129, 30 November 2001), observes, "The computer industry in Costa Rica is of considerable economic significance owing to its high growth rate during the past few years as a local industry with high value added. For example, studies have revealed that software production has a national value added exceeding 90 percent."² Similar benefits might be anticipated in countries with similar GDP structures and populations.

¹ Sallstrom, Laura and Damuth, Robert; "Economy, Information Technology, and the Critical Role of the Software & Services Sector" Focus Indonesia; 2002-2003; commissioned by Microsoft Corporation.

² Mata, Francisco and Jofré Arturo. *Informe Final Estudio de Oferta y Demanda del Recurso Humano*. June 2001. Competitiveness Support Programme for the Software Development Sector in Costa Rica.

The IT industry is global. Its success is attributable in large part to the relative absence of regulatory constraints and the resulting free exchange of ideas, talent, and resources.

Global Profile of Computer Services

The computer services sector tracks upturns and downturns in the information and communications technology (ICT) sector closely. Financial trends and political crises converged in late 2001 and 2002 to slow global consumer spending. These included stock market contraction (led by a fall in technology stocks), global recession, spikes in international terrorism, widespread business and investment caution, and an oversupply of telecommunications capacity. “As a result, the global ICT marketplace grew between 2000 and 2001, but slowly. Spending reached \$2.4 trillion compared with \$2.3 trillion the previous year. During the same period, the ICT market place in the U.S. — the largest such market — witnessed virtually no growth, while typical countries saw spending gains of five percent.”³ In 2003, the ICT market showed signs of recovery.

During the global economic downturn, ICT spending slowed. The World Information Technology and Services Alliance (WITSA), an association of the national information technology industry representative bodies from around the world, including Egypt’s Software Information and Communications Technology Chamber, identified several important industry trends in its most recent global assessment of the IT industry. According to WITSA’s Digital Planet 2002 and International Data Corporation (IDC) data:

China emerged as the world’s fastest growing ICT nation with a compound annual growth rate of 27 percent. Countries in Eastern Europe also saw significant ICT spending increases. These data suggest that countries in the developing world are committed to modernization through ICT investment.

The software sector experienced 100 percent growth [between] 1995 and 2001, exceeding any other ICT sector. For developed countries with a substantial installed base of computer hardware, the spending emphasis on computer software is quite logical. Over 50 percent of all software is sold in North America. When the question shifts from total dollars spent to total percentage of regional ICT budgets, the Middle East/Africa spends a greater percentage of every dollar on software than any other region.

While year-to-year total ICT spending demonstrated a small increase, the global market jumped from \$1.3 trillion in 1993 to \$2.4 trillion in 2001. The compound annual growth rate over that span is 7.6 percent.

ICT as a percent of global GDP nudged up a mere one tenth of one percent, to 7.6 percent. ICT as a percent of GDP has gained two percent since 1993. ICT as a percent of GDP lost ground in the U.S., from 8.2 percent in 1999 to 7.9 percent last year.

³ “Digital Planet 2002: The Global Information Economy” Executive Summary. www.witsa.org

The Digital Planet survey also finds a continuing global digital divide. The top 10 IT economies represent 80 percent of the global ICT market, while the bottom 10 markets represent less than one percent.

China represents a strong example of a developing country committed to economic expansion through ICT investment. Since 1993, the Chinese share of the global ICT marketplace has grown two percent; the US lost two percent in the same period. China's B2B (business to business) spending is 60 times larger than its 1999 level. China also enjoys the largest compound annual growth rate of personal computers in schools."⁴

Software is increasingly provided as a service rather than a good. Extensible markup language (XML) technology, the evolution of the World Wide Web Consortium (W3C), and the development of web services and a web services ecosystem, enable the purchase and use of software online. Software and many functions of hardware (storage, for example) are available as web services accessible any time, any place, and on any device. The importance of computer services is increasing significantly.

The emergence of web services is manifested in changing revenue sources. Revenue from horizontal solutions (solutions that can be used in different industries) will grow faster than vertical (industry-specific) solutions. In 2004, revenue from horizontal solutions will account for 76 percent of computer services revenue worldwide. Among horizontal solutions, e-business (online services transactions) will grow fastest (51 percent per year between 2000 and 2004; market share increasing from 19 percent in 2000 to 39 percent in 2004) (forecast by Gartner Dataquest in January 2001).

This trend is also manifested in the large (and increasing) number of consulting firms that combine business consulting and technology adaptation services. All the large consulting companies have technology experts to help streamline clients' business operations. Some previously significant players in the hardware market have refocused their businesses on services. IBM, which has a branch in Egypt, embodies this trend. The company has focused on growing its business in large-item hardware (such as servers) rather than desktops and laptops. IBM's acquisition of PriceWaterhouse Coopers also indicates the movement towards provision of services.

The computer services sector is leading growth rates. IDC data for 2002/2003 confirm the global trends observed by Digital Planet. A preliminary survey of the data confirms that the services segment tends to have higher forecasted overall growth rates than the hardware sector. Similarly, employment growth rates in the computer services sector are consistently higher than any other IT segment. In many cases, growth rates and employment in the computer services segment are expected to outpace the hardware segment.⁵

⁴ Ibid.

⁵ Information based on Microsoft's Growth and Opportunity Suite of data issued at the April 2003 Global Tech Summit. Microsoft data is based on IDC forecasts of Q3 2002 data.

Internet penetration rates will affect the ability of countries to leverage these trends.

High Internet penetration helps the growth of the computer services sector. According to the World Economic Forum, “world Internet users amounted to 500 million people at the end of the year 2001. The United States and Europe hold almost three-fifths of the world’s Internet users (58 percent), although less than 18 percent of the world’s population. The Arab region, with 5 percent of world population, represents less than 1 percent of the world Internet population.”⁶

Offshoring and outsourcing services are the most relevant computer services to big businesses. More companies are moving basic but essential business functions out of the company. For example, a number of consulting, computer, and financial companies have moved their sales and support calls out of the company. Often these calls go to lower-cost facilities in countries where their language is spoken. For example, if a customer in the United States calls for computer sales or technical support, the call is likely to be rerouted to India or the Philippines. A French company may route calls to a Moroccan facility, and a German company may route calls to a Czech call center. This is “offshoring” of services.

Outsourcing is a more sophisticated technique. A medical company needing a specialized software program might outsource the service from a specialized IT company rather than develop the program in house. Or a U.S. software development company might work on a software program during the day, and its Indian and European subsidiaries work on the program in turn during their workdays.

Openness and liberalization continue. The IT industry has developed largely unfettered by trade barriers. This is equally true for the services segment, but not for the highly regulated telecommunications industry. Indeed, the nature of the IT industry is one of cross-border technology exchange and development. Barriers to trade would have hindered growth in this sector significantly. Recognition of the value of liberalization in the IT sector is evident in recent efforts to liberalize the few existing barriers. For example, hardware and software tariffs still exist, but some 60 countries have agreed to a zero tariff rate on hardware and software goods as part of the WTO Information Technology Agreement. Egypt recently signed the agreement and expects to benefit greatly from the liberalization. Most tariffs on IT products in Egypt will be zero by 2005, and all of them will reach zero by 2007. The elimination of tariffs should help lower the cost of IT technology and enable more individual Egyptians to have access to computers, which in turn will stimulate growth in the local software and services segments.

Security, privacy, and open source software development are sector issues to track. In addition to the global trend towards services investment, several public policy and business investment trends should be noted. On the policy front, protection of personal data remains of paramount concern as countries learn how to address the vulnerability of personal and business data. In addition, businesses, government, and individuals all are

⁶ Peter Cornelius, “The Arab World Competitiveness Report 2002-2003”, World Economic Forum, 2003, p. 181.

examining security. More resources are being devoted to keeping vital infrastructure (public and business) free from electronic attacks. Some governments have put in place national data security plans. The European Union recently added an office to deal specifically with Internet and network threats. Laws and policies are being upgraded to keep pace with the problem. And the value of open source software (that can be developed by anyone who wants to review source code) compared to proprietary software is being considered by many governments and companies.

Computer Services Sector in Selected Regions and Countries

Regional and global politics and economics have hurt the Middle East and the IT sector, as other parts in the world. The war in Iraq, terrorist attacks worldwide, and the deterioration in the Palestine-Israeli situation have affected macroeconomic factors, including oil prices, tourism revenue, and currency fluctuations. Declining trade through the Suez Canal has hurt the Egyptian economy.

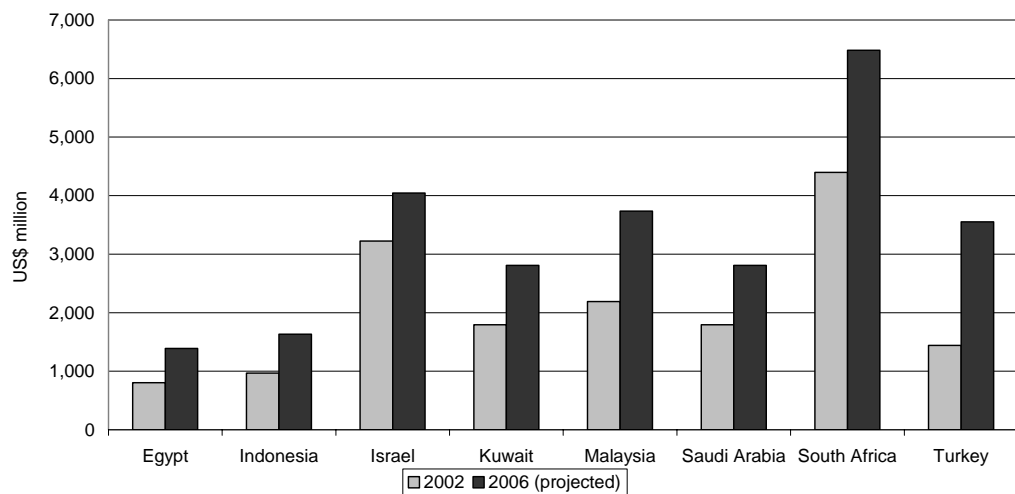
Despite these negative factors, a survey of recent news articles suggests local economies are improving somewhat. The Egyptian economy is closed compared to those of its Arab neighbors and as a result is somewhat immune to external factors. Furthermore, the floating of the Egyptian pound in January 2003 and the subsequent depreciation should benefit Egypt's IT sector, including the computer services sector, by boosting IT exports. Egypt is now in a strong competitive position globally to provide computer services and develop software. Indeed, the cost of software programming services is less than in India, a major exporter of computer software services. The currency depreciation opens a narrow window of opportunity for Egypt's software industry to achieve the product quality of Indian or U. S. products.⁷

The computer services sector in the region is forecast to grow slowly and steadily. We evaluated and compared eight countries' IT sector investment.⁸ Figure 2-1 illustrates these countries' current and projected IT investment. Of the countries evaluated Egypt has the lowest total investment in the IT sector with a \$803 million market in 2002, and Indonesia had the next-lowest investment at \$966 million. In the Middle East, the next-smallest market is Kuwait at \$1.7 billion, which is still twice the size of the Egyptian market. The Egyptian IT market is projected to have a 12.3 percent combined annual growth rate (CAGR) 2001–2006. This is slightly less than the projected growth rates of Kuwait and Saudi Arabia (at 12.9 percent each) and significantly less than Turkey's 25.1 percent projected growth rate.

⁷ Walid Galid, vice president Middle East and general manager Egypt, Fujitsu Services. Interviewed September 28, 2003.

⁸ The analysis included four Middle Eastern countries—Egypt, Israel, Kuwait, and Saudi Arabia—and four countries outside the region—Indonesia, Malaysia, South Africa, and Turkey.

Figure 2-1
Total IT Investment



(Source: IDC 2003)

The type and availability of IT in the Middle East are fairly consistent with global IT trends. Anecdotal information about technology in the Middle East region is available from a variety of online sources, including *PC Magazine Middle & Far East*, which reports on global IT trends and corporate initiatives in the Middle East. For example, Yahoo! and Oracle are working together to launch personalized online portals for businesses in the Middle East:

Oracle and Yahoo! announced a relationship to provide enterprise customers with more news choices for their employee portals. Customers will have access to more than 100 pre-built news applications, called portlets, featuring content from more than 2,000 web and premium news and trade sources. These Yahoo! portlets can be aggregated, personalised, and delivered directly to users of enterprise portals running on Oracle9i Application Server.⁹

Other articles in 2003 describe increased use of technology by services providers, including a massive services and technology upgrade by the Bank of Oman and the networking of the Middle East branch offices of an Arab-owned law firm. UAE-based IT activity is most prominent. Software gaming, online and off, has been identified as a potential growth market.

Following the global trend, Middle East countries are moving services and software to an online environment. Hewlett Packard (HP) has launched its web design standardization effort in the Middle East, according to Joseph Hanania, regional general manager, HP Middle East:

HP is leading the development of open standards for Web services management by working with its partners to establish a management interface that is domain,

⁹ <http://pcmag.dit.net/news/news.php?id=EpVluulApAMbNuLINC>

platform and vendor neutral. ... We're submitting this specification to OASIS [Organization for the Advancement of Structured Information Standards] to accelerate the adoption of common standards in Web services management and to simplify Web services development for our partners and customers today, while enabling them to plug into the adaptive enterprise of tomorrow.¹⁰

But low Internet penetration rates could hurt services and software development.

Forrester Research, cited in the World Economic Forum's (WEF) Arab World Competitiveness Report, calculated \$1.2 trillion in e-commerce transactions in 2002, of which 98 percent were conducted in North America, Western Europe, and the Asia-Pacific region. By contrast, the Arab world (nine countries in the WEF review) makes up 5 percent of global population and 2 percent of global GDP but accounted for only 0.2 percent, or \$3 billion, of e-commerce transactions.¹¹ This is due in part to the low IT penetration rates in this region. The Arab world represents only 0.7 percent of the world's Internet users.¹² PC penetration rates are low as well. In terms of overall network readiness, the WEF gives Kuwait and UAE consistently high rankings in terms of environment and infrastructure, citizen and business readiness, and Internet usage. Egypt consistently ranks in the middle or lower end of these scales compared to other markets in the region.¹³ Table 2-1 summarizes Internet usage by region.

Table 2-1

Percentage of the Population Online

Region	1995	1998	2000	2005 (projected)
North America	8.9	27.6	47.9	71.5
Western Europe	2.2	8.8	21.7	50.1
Eastern Europe	0.1	1.0	3.3	15.2
Asia-Pacific	0.1	0.7	1.7	4.6
South and Central America	0.1	0.5	2.1	7.9
Middle East and Africa	0.0	0.3	0.7	2.4
World	0.7	2.5	5.2	11.1

Source: Computer Industry Almanac

IT contributes to GDP throughout the Middle East. In eight countries evaluated by the IDC, IT had the largest impact on Kuwait's economy, representing 5.55 percent of GDP in 2002. By comparison, IT represented 4.06 percent of South Africa's, 0.97 percent of Saudi Arabia's, and 1.03 percent of Egypt's GDP. By 2006, IT revenues are expected to comprise 7.77 percent of South Africa's GDP.

¹⁰PC Magazine Middle & Near East. September 29, 2003; "HP fuels industry-standard approach to web services management" <http://pcmag.dit.net/news/news.php?id=EpVAuVZkIVHrsOfjNA>

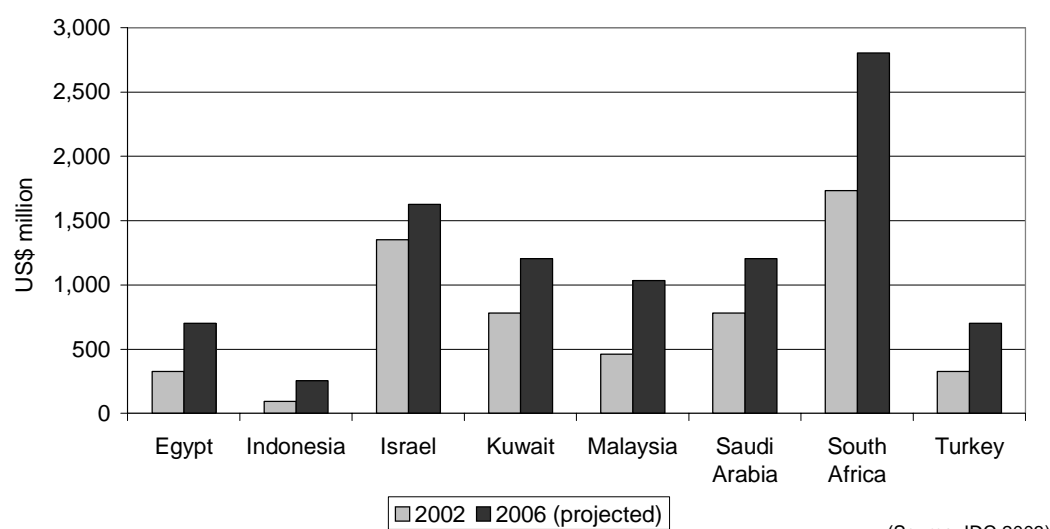
¹¹Ibid, Cornelius, p. 181.

¹²Ibid, Cornelius, p. 181.

¹³Ibid, Cornelius, p. 184.

The computer services sector in Egypt is anticipated to grow faster than in the other Middle Eastern markets evaluated by IDC – 19.5 percent CAGR during 2001-2006. However, growth rates in the services sectors in Indonesia and Malaysia will outpace growth rates in Egypt, at 27.5 percent and 21.7 percent respectively. See Figure 2-2.

Figure 2-2
Investment in Computer Services

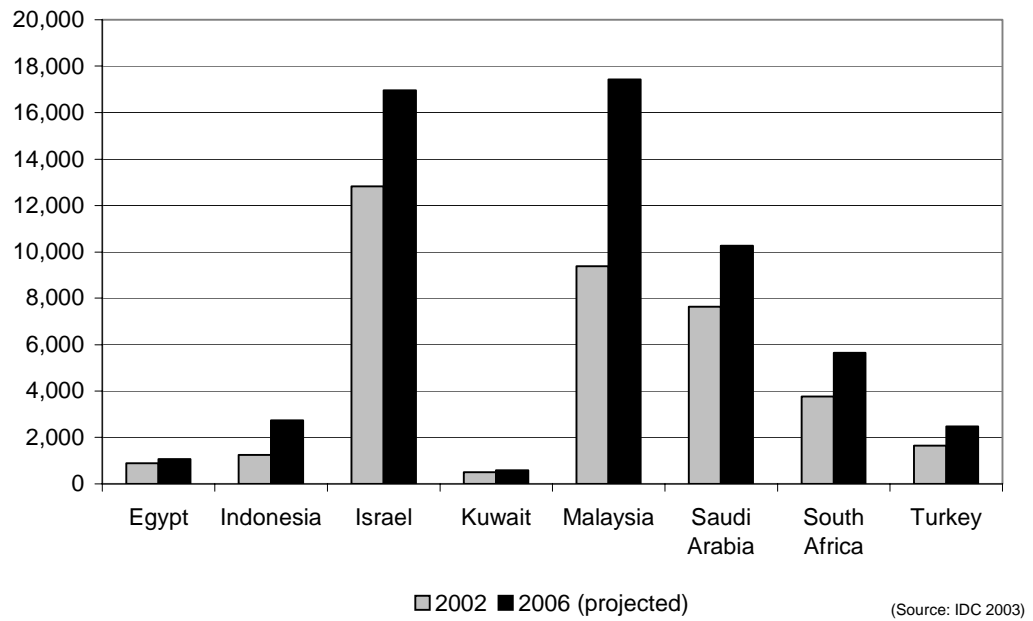


(Source: IDC 2003)

The computer services segment has contributed significantly to employment in each of these economies. See Figure 2-3. IDC employment figures are difficult to interpret, dividing the IT sector not only into hardware, software, and services, but into additional categories of “channels” and “professionals.” In all cases, the latter two categories employ the most people.

Among the hardware, software, and services segments, the computer services sector employs the most people. However, services employment growth rates in each country surveyed will be slower than the previous 5-year growth rates. In most cases, the projected growth goes from historical double-digit rates to single-digit growth. Only in Malaysia and Indonesia is the computer services segment forecast to grow faster than in previous years, at 21.3 percent and 16.4 percent respectively. The general slowdown is consistent with global IT trends.

Figure 2-3
Number of IT Service Employees



3. Trade in Services Background

This section reviews international trade in services and the GATS to create a context for understanding obligations that Egypt may choose to undertake in the WTO.

Size and Scope of Global Trade in Services

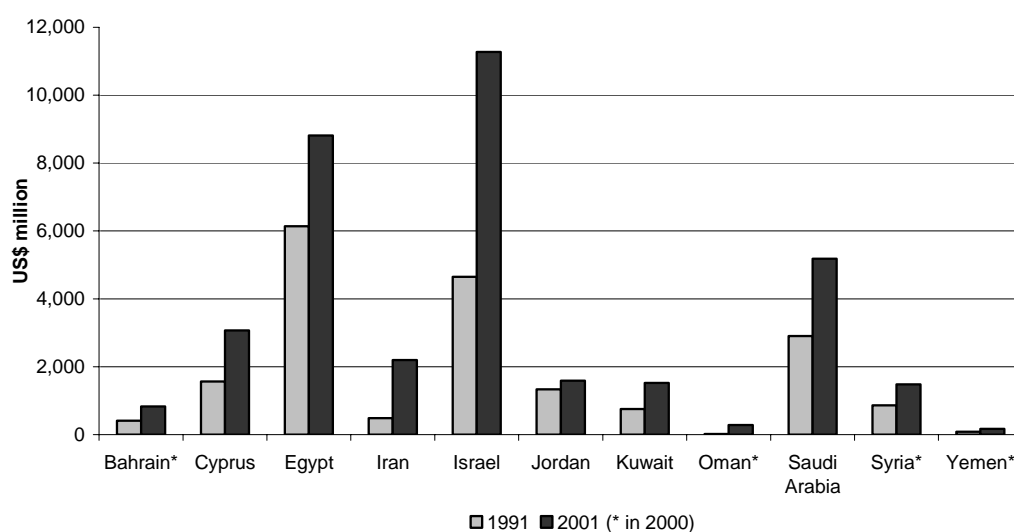
In 1999, services represented the fastest growing sector of the global economy and accounted for 60 percent of global output, 30 percent of global employment and nearly 20 percent of global trade. In 2001, global exports of services reached \$1.5 trillion and global imports reached \$1.4 trillion.¹⁴ Given the difficulties in gathering data on services, it is likely that the true scope of trade in services exceeds these figures, especially for trade in computer services, because the untrackable nature of online transactions complicates recordkeeping.

According to the WTO, in 2001, (the last year for which WTO data are available) all countries registered negative growth for import and export of services, except for the European Union, which saw a slight 2 percent increase in imports and 1 percent increase in exports. Egypt exported \$9 billion¹⁵ in services and imported \$6 billion.¹⁶ This was a 9 percent decline in exports and a 10 percent decline in imports of services from 2000 to 2001. The decline, consistent with declines in other markets, is likely attributable to the global economic slowdown and its negative impact on Egypt's economy. Indeed, during the past 10 years, Egypt's services exports and imports have grown steadily at about 6 percent per year. Egyptian services exports represent 0.6 percent of global services trade and 0.4 percent of services imports. Figure 3-1 shows Israel, Egypt, and Saudi Arabia leading overall services exports in the region. Oman and Yemen have the smallest services exports.

¹⁴ WTO – 2002 Trade Statistics

¹⁵ WTO – 2002 Trade Statistics, Table III.4, p.44.

¹⁶ WTO – 2002 Trade Statistics, Table III.5, p.44.

Figure 3-1*World Exports of Commercial Services in Middle East/Africa Economies, 1991-2001*

Source: WTO 2002 Statistics

General Agreement on Trade in Services

Until the 1980s, regulators had resisted international negotiations on services for fear that services commitments would limit countries' ability to exercise domestic regulatory control. However, as services played an increasingly prominent role in developing and developed economies alike, world trade leaders decided to begin negotiations on a services agreement. The result was the General Agreement on Trade in Services or the GATS. The agreement, which became effective on January 1, 1995, as part of the WTO single undertaking, is the first and only multilateral framework of principles and rules governing international trade in services. The text carefully balances the diverse interests and objectives of developing and developed countries, regulators, and free traders. The GATS gives WTO members an important opportunity to expand markets for services exports while reaping the benefits of greater access to critical infrastructure services.

The scope of the GATS is extensive. The GATS applies, in principle, to all service sectors (see Appendix A for an illustrative list of services sectors).¹⁷ There are two exceptions to GATS coverage. First are "services supplied in the exercise of governmental authority."¹⁸ These are services that are supplied neither on a commercial basis nor in competition with other suppliers. Examples are social security schemes and other public services, such as water treatment, that may be provided on a non-commercial basis. The other exception is

¹⁷ For more information, see [www.wto.org/home>trade topics>services>gats objectives](http://www.wto.org/home>trade%20topics>services>gats%20objectives).

¹⁸ GATS Article I(3)

in the Annex on Air Transport Services, which exempts air traffic rights and services directly related to the exercise of such rights.

A number of positive aspects of the GATS are important to Egypt. First, the GATS provisions ensure that regulators maintain the right to regulate. The GATS does not require any service to be deregulated. Governments maintain the right to set health, safety and licensure standards to maintain the public order and security interests and to preserve the integrity and the level of performance of regulated sectors. Second, the text acknowledges the special challenges and needs of developing countries. Article IV of the agreement provides for increasing participation of developing countries in the GATS. Negotiating guidelines call for particular attention to be paid to sectors of interest and modes of supply of interest to developing countries. These two items are included in the main text of the agreement.

The structure of the GATS is based on three legal elements: the main text containing general obligations and disciplines (*provisions*); individual countries' specific commitments and most-favored-nation (MFN) exemptions (*schedules of commitments*); and rules for specific sectors (*annexes*).

PROVISIONS

The main text (or provisions) of the agreement reflects long-standing principles of international trade established in the General Agreement on Tariffs and Trade (GATT) such as multilateralism, non-discrimination, transparency, and progressive liberalization. Despite the similar foundations of the GATS and the GATT, which governs trade in goods, the agreements differ in important ways. For example, national treatment is a general non-negotiable obligation in trade in goods, whereas it is subject to negotiations in trade in services.

GATS provisions can be divided into two categories: general obligations and specific commitments.

General Obligations

General obligations apply unconditionally to all services and include MFN exemptions and transparency. Other general obligations include the establishment of administrative review and appeals procedures and disciplines for the operation of monopolies and exclusive suppliers.

MFN. Members are required to extend to services or services suppliers of other members treatment no less favorable than that accorded to like services and services suppliers of any other country. Members sought MFN exemptions to this general obligation before the agreement entered into force. Exemptions can be granted to new members at the time of accession or, for current members, with a waiver, but exemptions in principle do not last

longer than 10 years. The GATS allows members to enter into regional trade agreements or to mutually recognize regulatory standards or certificates if certain conditions are met.

Transparency. The GATS requires members to publish relevant laws and regulations and set up specific inquiry points for foreign companies and governments to obtain information on regulations of any sector. This is both an obligation and a right. Transparency also requires notifying the WTO of changes in regulations that apply to commitments made under the schedule of commitments.

Specific Commitments

Specific commitments are conditional obligations, which apply only to the sectors listed in a country's schedule of commitments and include national treatment and market access.

Market Access. Market access is a negotiated commitment in a specific sector and can be subject to different types of limitations. Limitations can include the number of services suppliers, services operations, or employees in a sector; the value of transactions; the legal form of the services supplier; or the participation of foreign capital in a sector.

National Treatment. When a member makes a national treatment commitment in its schedule, it commits not to operate discriminatory measures benefiting domestic services or services suppliers more than foreign services or services suppliers.

SCHEDULES OF COMMITMENTS

Schedules of commitments are mandatory, but flexible. Each WTO member is required to have a schedule of commitments. However, some members – generally developed countries – have more extensive commitments than others.

The schedule allows limitations to market access and national treatment, or to a particular mode of supply (explained below). The schedule may also be used to assume additional commitments regarding, for example, the implementation of specified standards or regulatory principles. Members are free to tailor coverage to meet national policy objectives, constraints, and goals. The schedule can contain sectoral and horizontal commitments. Horizontal commitments apply across all sectors listed in the schedule. Whereas horizontal commitments often refer to a particular mode of supply, notably commercial presence and the presence of natural persons, sector-specific commitments contain entries that apply only to a particular service.

Commitments in the sector-specific sections are undertaken with respect to each of the four modes of service supply:

- **Mode 1, Cross-border supply**—service supplied (e.g. electronically) from the territory of one Member into the territory of any other Member;

- *Mode 2, Consumption abroad*—service supplied in the territory of one Member to the service consumer of any other Member (e.g., tourists in Egypt);
- *Mode 3, Commercial presence*—service supplied by a service provider of one Member, through commercial presence in the territory of any other Member (e.g., bank's foreign branch);
- *Mode 4, Movement of natural persons*—service supplied by a service provider of one Member, through presence of natural persons of a Member in the territory of any other Member (e.g. consultant traveling to Egypt to provide advisory services)

A detailed explanation of the relevance of the modes of supply to the computer services sector is provided in Section 4, Computer Services Sector under the GATS.

ANNEXES

Annexes provide special treatment for some sectors. There are several annexes to the GATS, including annexes on movement of natural persons, financial services, telecommunications and air transport. The most relevant annex for the computer services sector is the telecommunications annex. The telecommunications annex recognizes the dual role of telecommunications – both as a service in and of itself and as a facilitator of provision of other services. As such, the telecommunications annex provides that foreign-service providers are given access to the public telecommunications network without discrimination. This Annex is particularly important for computer services in a cross-border mode, which necessitates the use of a telecommunications network.

4. Computer Services under the GATS

This section highlights the challenges of covering the rapidly changing computer services sector under a trade agreement. It describes the information, communications, and technology (ICT) industry and how computer services fit into the ICT sector and the GATS, particularly the schedule of commitments. This background is important for policy makers to understand the scope of the GATS and position Egypt strategically in request-offer negotiations. Throughout the section, issues are related specifically to a potential Egyptian commitment in computer services. Challenges and recommendations are highlighted.

Computer Services and the ICT Sector

Discussion in this report is limited to the information technology (IT) sector (as opposed to the ICT sector). As explained earlier, IT includes software, hardware, and services but excludes telecommunications (but not Internet content providers, depending on various definitions of the sector). It is convenient to exclude the telecommunications sector for two reasons. First, the GATS nomenclature categorizes telecommunications separately. Second, IDC, a major source of data for the IT sector (that this report relied on heavily), also uses this definition. Nevertheless, some data used in the report will include telecommunications and cover the full ICT sector.

Hardware producers include companies that make computer components such as semiconductor chips, circuit boards, routers, and materials for computer screens (Advanced Micro Devices, Cisco, Intel) and companies that manufacture the final product (Dell, HP, and IBM). Software producers make a wide range of products, including operating systems (Windows, Linux), applications (for virus detection, word processing, and accounting), and specialized, customized software (such as medical or manufacturing software).

Services suppliers provide basic computer support services for small or medium-sized companies or consulting services such as analysis of the operations of a multinational

company, or develop and implement a strategic technology plan to make a company more efficient. Computer services include call centers and other outsourced technical operations

IT sector business models cross categories, however. The structure of the IT industry is evolving and changing. In the early days of the IT industry, a few corporations provided hardware, software, and services. As the industry matured, each of these segments became more specialized, and specialized companies such as Microsoft emerged. Today, the industry continues to restructure, with former hardware companies such as IBM shifting their focus to services, and software makers such as Microsoft dabbling in hardware (X-box). In addition, some companies integrate a range of services into one complete system. For example, IBM offers computer hardware, software, and computer services. Internet companies use the telecommunications network to provide computer services or deliver software or voice services. Internet companies like Yahoo! provide services such as e-mail that originally were provided by a telecommunications company. It is difficult to develop a model for a particular segment of the industry or a business in this changing environment. We therefore use the GATS categorization “computer and related services.”

Computer Services and GATS Classification

The complexity of the evolving industry is illustrated by the large number of countries and industries providing guidance to the WTO on this issue. The Japanese government, working with the private sector, submitted a list of the types of business activity in computer services that succinctly describes the sector today. According to a joint submission of the U.S. IT industry, a non-exhaustive list of computer services includes consulting, software-related services, data processing services, database services, information technology outsourcing, web hosting, application hosting, information technology security services, computer maintenance and repair, customer support, information technology training, and other related services.¹⁹ Taiwan offered a value-chain assessment of the scope and types of industries covered under computer consulting services, not to propose alternative definitions but to seek clarification from the WTO. Because industry developments and technological advances do not match WTO and GATS terminology nomenclature, ensuring adequate GATS coverage of the computer services sector poses a challenge.

The WTO issued an illustrative list of sectors for members’ schedules of commitments (Appendix A). This document, w/120 in the GATS numbering system,²⁰ identifies sectors

¹⁹ World Information Technology and Services Alliance, WITSA’s membership supports coverage of these sectors. WITSA www.witsa.com, is an association of IT associations from many countries around the world.

²⁰ W/120 is the WTO numbering for its document laying out a list of illustrative services for possible coverage under the GATS. The w/120 document also links service sectors to the United Nations CPC system. MTN.GNS/W/120, July 10, 1991, “Services Sectoral Classification List.”

and assigns United Nations Central Product Classification (CPC) definitions to illustrate intended coverage. Use of the list in negotiations is voluntary, but the list has become a de facto standard. As such, the list and CPC references serve as guides for understanding how the computer services sector fits into the GATS.

Because of the rapid pace of technological change in the computer and related services sector (e.g., web hosting, IT outsourcing over the Internet) the language used by many WTO members to define this sector is, and always will be, out of date. Assuming members continue to use the w/120 document for making commitments, the most applicable sector is the "computer and related services" sector and its subsectors, "consultancy services related to the installation of computer hardware," "software implementation services," "data processing services," "database services," and "other."

According to industry descriptions of the computer services sector, a broadly applicable list of w/120 and related CPC categories is provided in Exhibit 4-1. A detailed list of CPC category descriptions is provided in Appendix B.

Exhibit 4-1

Classification Nomenclature

B. Computer and Related Services	
Division 84 of Computer and Related Services	n. On-line information and/or data processing (including transaction processing) (843)
a. Consultancy services related to the installation of computer hardware (841)	F. Other Business services; c. Management Consulting Services (865 – General management consulting, financial management consulting, marketing management consulting, human resources, production, public relations, other)
b. Software implementation services (842)	
c. Data processing services (843)	D. Adult Education
d. Database services (844)	Sound recording and audiovisual services
e. Other	
C. (Value Added) Telecommunications Services	
h. electronic mail (7523)	
j. On-line information and database retrieval (7523)	

Despite the merging and emergence of new and different kinds of services, according to most industry experts, what has changed in most cases is not necessarily the core service, but the method of delivering the service or the subject matter covered. So it remains useful to use the WTO documentation, but preferably in its broadest form to accommodate changes. After a great deal of discussion, members probably will reach a general understanding (formal or informal) that the existing GATS terminology should be used. Furthermore, members are moving towards making commitments at the highest level to accommodate future services. This movement towards a higher-level classification is due not only to the changing nature of the sector, but to the fact that most WTO

members – developed and developing countries alike – have determined that competitiveness of computer services depends on having a liberal environment where ideas can be exchanged and technology transferred. Such a liberal environment also includes transparent and efficient administrative and regulatory requirements that encourage investment in IT.

Defining future services is impossible task – no one can predict the future. Therefore, for most computer services, the consensus is to make binding commitments to the broadest category, either to the WTO's w/120 "B. Computer and Related Services" category or the CPC category 84, Computer and Related Services.

In recent discussions, the European Union has taken a broad approach in its proposal, "Coverage of CPC 84– Computer and Related Services."²¹ In this paper, the European Union requested governments to make commitments at the highest level appropriate to ensure that new services are included. The European Union text specifically lists web hosting, domain hosting, and grid services under this category, although these services may be more appropriately covered (it is still unclear) by value-added telecommunications categories. The U.S. government has taken a relatively neutral approach, arguing that the most important issue is not definitions or location of commitments, but ensuring adequate coverage of the sector, whatever approach is taken. In its Uruguay Round schedule the United States bound computer and related services according to w/120 nomenclature. So a broad approach to the sector has always been incorporated in the U.S. schedule.

Venezuela made commitments during the Uruguay Round for the CPC 84 category, setting an important precedent for developing countries. Similarly, Korea bound at the 84 level. Countries making commitments in computer services in the Doha Round, including Australia, Taiwan, and Paraguay bound at the two-digit level. Yet some countries still feel uncomfortable making such broad commitments.

DATABASE AND INTERNET SERVICES

The European Union and the United States argue that most Internet services are essentially database storage services. Web hosting is the storage and management of data, as are many application services. The CPC Computer Services category defines database services "as all services provided from primarily structured databases through a communication network." This describes most new services (although grid computing, for example, would fall under 8433, computer time sharing²²). The database services

²¹ "Communication from the European Communities and their Member States: Coverage of CPC 84 – Computer and Related Services"; 24 October 2002; TN/S/W/6.

²² 8433 Time-sharing services: This seems to be the same type of service as 84320. Computer time only is bought; if it is bought from the customer's premises, telecommunications services are also bought. Data processing or tabulation services may also be bought from a service bureau. In both cases the services may also be bought from a service bureau. In both cases the services might be time sharing processed. Thus, there is no clear distinction between 84320 and 84330. Data processing or tabulation services may also be bought from a service bureau

sector may also be touched by concept of “on-line information and database retrieval.” The language in the w/120 document seems more appropriate to the new services, but the link created is to CPC 7523 “Data network services,” which are “[n]etwork services necessary to transmit data between equipment using the same or different protocols.” Such services can be provided via a public or dedicated data network. This puts the services squarely in telecommunications and potentially beyond the scope of computer services. Nevertheless, some computer services companies provide these services and require access to a liberal “data network services” infrastructure to do so.

Some countries have created a category called “Internet services.” No such category exists on the w/120, so it is unclear what was intended to be bound. (Egypt included this category in its schedule of commitments in telecommunications.) Most often, however, this category is linked to telecommunications, so it probably means connection services, distinct from content or application. In short, to ensure full coverage, countries should bind to all these categories and request that their trading partners do the same.

OTHER SERVICES SECTORS

In addition to value-added services, a country might consider binding audiovisual and sound recording services, management consulting, and adult education. These categories could be defined to include computer services if necessary. Audiovisual and sound recording services are very sensitive in the WTO discussions. Australia, the European Union, and Canada in particular have argued for the exclusion of these sectors for cultural reasons. Similarly, Egypt has an MFN exemption in this sector allowing for preferential coproduction agreements, so it is not possible to make a commitment. However, Egypt has a competitive edge in this area, according to the World Economic Forum: “A vibrant export-oriented software industry is expected to set the stage for a regional role in Arabization of Internet content.”²³ To the extent that Egypt develops audiovisual Internet content (online movies, films, music videos), it would not be able to bind this category.

Some computer services also are offered by companies whose primary business is not computer services. A number of Egyptian companies, for example, offer management consulting as their primary business, but also offer significant computer services. Some multinational consulting firms offer computer services as well. And, as noted, according to the Japanese definitions, these services can fall under management consulting. Therefore, for full coverage, it may be useful to bind (and seek commitments from trading partners for) the management consulting sector as well as the computer services sector.

Finally, there has been some debate about where computer training centers fall in the CPC. Computer training provided as part of a larger consultation falls under the CPC 84, “other” category, but, computer training provided by schools as their main business may fall under “adult education” in the WTO education services sector rather than the

²³ Ibid, Cornelius, p. 184

computer services sector. In this case, Egypt may wish to consider binding services commitments in the adult education category.

SOFTWARE AS GOOD OR SERVICE?

Software can be viewed as a good or a service. IDC places only packaged software in its “software” category and incorporates specialized software into the “services” category. Forrester Research notes that “portal technologies are erasing client software and user pricing models...to adapt, software vendors will have to move to pricing based on usage, such as a count of transactions, features used, or data stored on the product.”²⁴ Forrester has identified the trend of renting software online by usage time rather than purchasing it. This trend affirms the notion of software as a service rather than a good, or at least blurs the line between software as a good or service.

The European Union has been advocating the broadest GATS coverage of content-based items (software, sound recordings, motion pictures) because the agreement lets them use the MFN exemption. The European Union has exercised the exemption to carve out from coverage the culturally sensitive audiovisual and sound recording industries. Most software industry representatives simply want to ensure that protection of online products is at least equivalent to that granted to packaged products. For purposes of the services agreement, coverage under 84240 (CPC) “Programming services: the implementation phase, i.e. writing and debugging programs, conducting tests, and editing documentation under” is recommended. When packaged, software would be covered under trade in goods (including by the Information Technology Agreement, to which Egypt is party). These are issues that Egyptian policymakers will need to consider.

Computer Services Modes of Supply

To fully understand Egypt’s potential obligations under the GATS, it is important to examine the way that computer services are delivered and to understand how this delivery fits into GATS “modes of supply”. Table 4-1 summarizes the four modes of supply.

²⁴ “Organic IT, 2002 Forrester Research, Inc. April 2002

Table 4-1*Understanding the Modes of Supply*

Supplier Presence	Other Criteria	Mode
Service supplier <u>not present</u> within the territory of the Member	Service delivered <u>within</u> the territory of the Member, from the territory of another Member	Mode 1: Cross-border supply (a programmer in Jordan e-mails his customized program to a client in Egypt)
	Service delivered <u>outside</u> the territory of the member, in the territory of another Member, to a service consumer of the Member	Mode 2: Consumption abroad (a Jordanian national visiting Egypt receives maintenance services for his PC).
Service supplier <u>present</u> within the territory of the Member	Service delivered within the territory of the Member, through the commercial presence of the supplier	Mode 3: Commercial presence (a Jordanian IT company sets up a new branch physically located in Egypt)
	Service delivered within the territory of the Member, with supplier present as a <u>natural person</u>	Mode 4: Presence of natural persons (a Jordanian computer programmer travels to Egypt to perform computer services)

All modes of supply are important for computer services.

Mode 1 is relevant in the current online environment. Most WTO members understand that cross-border means the electronic transmission of a service. When the Marrakech Protocol was signed after the Uruguay Round, there was really no concept of the Internet. Mode 1 was envisaged for electronic fax services. Clearly, the understanding of a cross-border transaction has evolved. Today, WTO Members essentially agree that this is the mode (or at least one of the modes) of supply for services delivery via the Internet. Mode 1 is particularly important for computer services, including customized software development, as they move online.

Mode 2 is more challenging to understand in the context of computer services. In the WTO discussions, Members generally agree that e-commerce transactions are delivered in a cross-border mode (Mode 1). Technically, however, an electronic service may be delivered *outside* the territory of another member, to a service consumer of the member. One school of thought in Internet law is that an Internet transaction, including an online computer services transaction, is transacted in the location in which a server is based. So, for example, if someone in France buys a service from e-Bay.com, the customer has conducted the transaction in the United States because all e-Bay.com's servers are in the United States. Such issues have broad implications for legal jurisdiction in sensitive areas such as content restrictions.

Mode 3 is relevant, particularly for large multinationals that offer a range of services globally and may want to provide consistent services to their customers worldwide. Similarly, computer services offices may want to draw on the resources of Egyptian engineering talent and low-cost labor. They may decide to move a computer services facility, such as a call center, to Egypt. That call center would serve regional needs and act

as a hub for key services. Or software companies may decide to open a local office in Egypt, as has been the case with India. Offices around the world allow companies to work on software code 24 hours a day. As one team ends its day and programming work, a team in another part of the world begins its day and takes up the work.

Mode 4 is essential to ensure that individual experts can be on company premises to make assessments and deliver services. The unique know-how of individual computer experts is critical to successful development and delivery of the various computer services. India submitted a paper to the WTO recommending broader commitments in movement of personnel through the easing of visa restrictions and qualifications.²⁵ India specifically recommended drawing from the International Labor Organization's classification system and allowing these categories of workers to move freely. India also recommended removing social security payments and other charges on professionals in the computer services sector.

Mode 4 has been the subject of several developing country papers. Mercosur (Brazil, Argentina, Paraguay, and Uruguay) submitted

At the same time, the rapid market growth of the information technology sector has led it to be a substantial generator of new employment, in particular of skilled and well-paying jobs, not only in industrialised markets but in emerging markets as well. Given these labour-demand characteristics, supply of computer and related services through the GATS mode of movement of natural persons takes on a great deal of economic significance. The imposition of measures related to qualification requirements and procedures, licensing requirements and technical standards can give rise to discretionary measures and can constitute a significant barrier to foreign suppliers of these services, particularly in commercial presence (mode 3) and movement of natural persons (mode 4).²⁶

²⁵ S/CSS/W/141, 22 March 2002, "Communication from India: Negotiating Proposal on Computer and Related Services"

²⁶ S/CSS/W/95, 9 July 2001 Communication from Mercosur, re Computer and Related Services.

5. Status of GATS Negotiations, Computer Services Commitments, Offers, and Requests

With a foundation of understanding the GATS, the computer services industry, and the computer services sector in the GATS, we now discuss the status of GATS negotiations and Egypt's position vis-à-vis other WTO members with respect to computer services.

GATS Negotiations

Negotiations on the GATS began in February 2000 as part of the Uruguay Round's built-in agenda for liberalization.²⁷

Negotiations on Provisions. The built-in agenda foresaw work on the main framework GATS provisions, including discussions about disciplines for subsidies, government procurement, emergency safeguards, and licensing and domestic regulation. Working groups have been established in each of these areas and they continue to discuss expansion of the Agreement. One of the more active working groups is discussing subsidies. Monitoring progress here will be particularly important in the computer services sector because throughout the world this sector regularly receives tax incentives, preferential government subsidized loans, and direct grants, among other incentives.

Negotiations on Schedules. Recognizing the importance of securing global trade liberalization in services, at the initiation of the Doha Round, WTO members established a series of deadlines: (1) submission of requests for liberalization from trading partners by June 30, 2002; (2) countries table offers by March 31, 2003; and (3) completion of negotiations by January 2005. Pursuant to the Doha mandate, members have been exchanging bilateral initial requests since June 2002 in the "request-offer" process. More than 30 countries have submitted offers to the WTO, including Argentina, Australia,

²⁷ Part of that built-in agenda included sectoral work on financial services and telecommunications. Both of these were completed prior to the launch of the Doha Round. Basic standards for liberalization in these two services areas have been established.

Bahrain, Canada, People's Republic of China, Chinese Taipei, Czech Republic, European Communities, Hong Kong, Israel, Japan, Korea, Mexico, New Zealand, Panama, Paraguay, Poland, Slovenia, Switzerland, the United States, and Uruguay. Similarly, Members have submitted requests of one another.

In addition, MFN exemptions (such as the European Union's MFN exemption for special preferences reserving air time for audiovisual works of European origin on television), taken at the beginning of the WTO process in principle should be phased out over 10 years. Discussions to remove these exemptions are underway.

Autonomous liberalization. Liberalization of schedules and removal of MFN exemptions are give-and-take processes. Members may wish to liberalize services for these negotiations, but not necessarily undertake binding international obligations. To ensure countries receive credit for liberalizations in services, regardless of their willingness to make a legally binding commitment, members agreed in March 2003 to provide credit for "autonomous liberalization." Measures qualifying for this credit would be (1) subject to scheduling under Part III of the GATS and/or leading to termination of an MFN exemption; (2) compatible with MFN; (3) undertaken unilaterally since previous negotiations; and (4) applicable to any or all services sectors. Negotiating partners have agreed on nine criteria for evaluating the value of the liberalization. Examples include sectoral coverage, date of entry into force, share of trading partners' total trade affected, and share of liberalizing country's total trade affected.²⁸ Egyptian trade officials are evaluating the services regime in Egypt to determine if any post-Uruguay Round liberalizations would qualify but have found none in the computer services sector.

Commitments, Offers, and Requests

At the end of the Uruguay Round, 62 GATS schedules (counting the EU schedule as one) contained commitments on computer and related services.

Of these, 52 commit on sub-sector (a) consultancy services related to the installation of hardware, 57 commit on (b) software implementation services, 55 commit on (c) data processing services, 49 commit on (d) data base services and 30 on (d) "other" computer services.²⁹ The quality of commitment varied, but was very strong overall.

"Looking at the level of commitments for sub-services (a)-(d) as a whole, the proportion of unrestricted, or full, market access commitments on cross border supply ranges between sub-sectors from 60-63%, the proportion of full commitments on consumption abroad from 70-76% and the corresponding range for commercial presence is 68-77% (but which falls to 29-33% when horizontal limitations on mode 3 are taken into account).

²⁸ "Negotiators agree on modalities for treatment of autonomous liberalization"; 10 March 2003; Press 335; www.wto.org.

²⁹ WTO Secretariat's document S/C/W/45 (dated July 24, 1998).

The proportion of full commitments on market access for presence of natural persons is lowest at 4-7% (falling to 2% when horizontal limitations are factored in). In commercial presence (mode 3), there are important barriers such as the following as the most significant ones: a) restrictions to the level of participation of foreign equity; and (b) limitations to the type of legal entity or joint venture.³⁰

Sixteen of 18 countries acceding to the WTO since the Uruguay Round have bound Computer and Related Services. All the commitments are liberal and strongly bound. Oman put in an investment liberalization that has taken effect. Jordan made full and open commitments in the sector. All of the countries acceding after the Uruguay Round can be classified as developing or newly emerging economies. Following these accessions, 74 countries made commitments in this area³¹ (four countries were already counted in the WTO paper cited above).

During the negotiating process, four new offers on computer services have been presented, from Bahrain, Paraguay (at the 84 level), Panama, and Macau. Australia, the European Union, and Taiwan will amend their offers to bind at the 84 level. Hong Kong moved to the three-digit level of binding and has removed limitations on definitions. Japan offers some liberalization in horizontal commitments that positively impact the sector.

Requests of Egypt in Computer Services. Twelve of Egypt's trading partners have requested that Egypt include computer services in its schedule of commitments. The requests are for full coverage of the sector in the strongest possible manner (full market access and national treatment). The following countries requested that Egypt include computer services in its offer: Canada, Croatia, Czech Republic, European Union, Japan, Jordan, Lithuania, Norway, Oman, Pakistan, Turkey, and the United States.

³⁰ Ibid. WTO.

³¹ Four post Uruguay Round accession countries were included in the WTO paper above. This number counts the EU as the original schedule with 15 countries. It counts separately countries' schedules of countries that joined the EU post Uruguay Round.

6. Economic and Business Profile of Computer Services in Egypt

In forming an opinion on whether or not to schedule commitments in computer services, Egyptian policymakers will want to consider a detailed assessment of the sector in Egypt. The following section provides a detailed economic assessment of Egypt's computer services sector, evaluating, size, impact, and downstream effects. Most of the data used for the assessment come from IDC and interviews in the field. The field data should be considered subjective.

Background

In the Egyptian computer services sector IT goods and services overlap, as do subsectors in the computer services sector.³² For the economic analysis, we confined ourselves to definitions used by our primary data source, IDC. IDC defines computer services as including five subsectors: IT consulting, implementation, support services, operations management, and training and education. These subsectors are described in Appendix C. Fortunately, the IDC categorization loosely parallels the CPC used in the GATS.

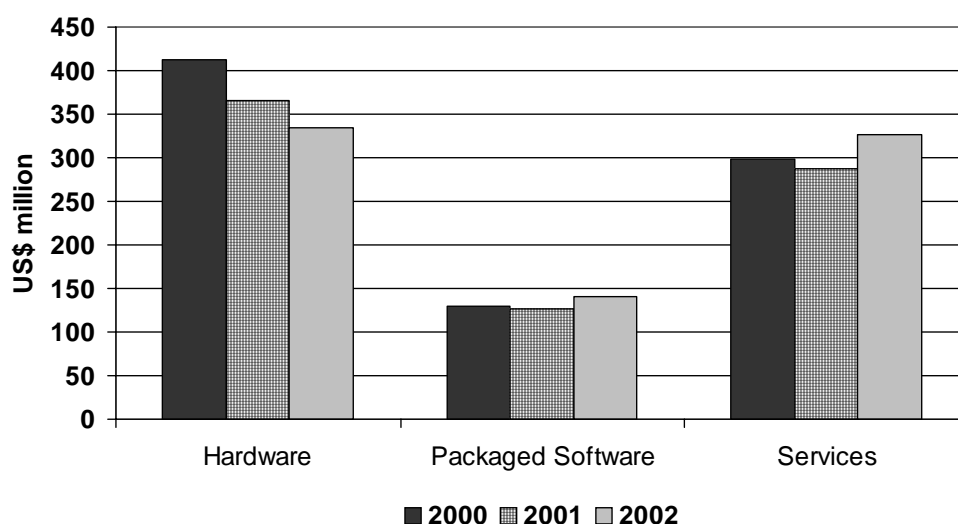
Market Size and Trends

Spending on all IT (software, services, and hardware) in Egypt dropped from \$840 million in 2000 to \$779 million in 2001 then increased slightly in 2002. In the IT sector, the computer services segment grew significantly in 2002, approaching 13 percent, outpacing the whole IT sector (3 percent). Computer services are also growing faster than Egypt's GDP—four times the rate. Throughout the period 1995–2000, in part as a result of Egypt's movement towards a free and competitive market, the computer services sector grew rapidly, in size and quality, to meet the needs of business. The drop in spending over the

³² A full explanation of the definitional challenges in the computer services sector were provided in previous sections.

last three years is attributed to both the global recession and Egypt's recession, as reflected in Figure 6-1.

Figure 6-1
IT Spending in Egypt



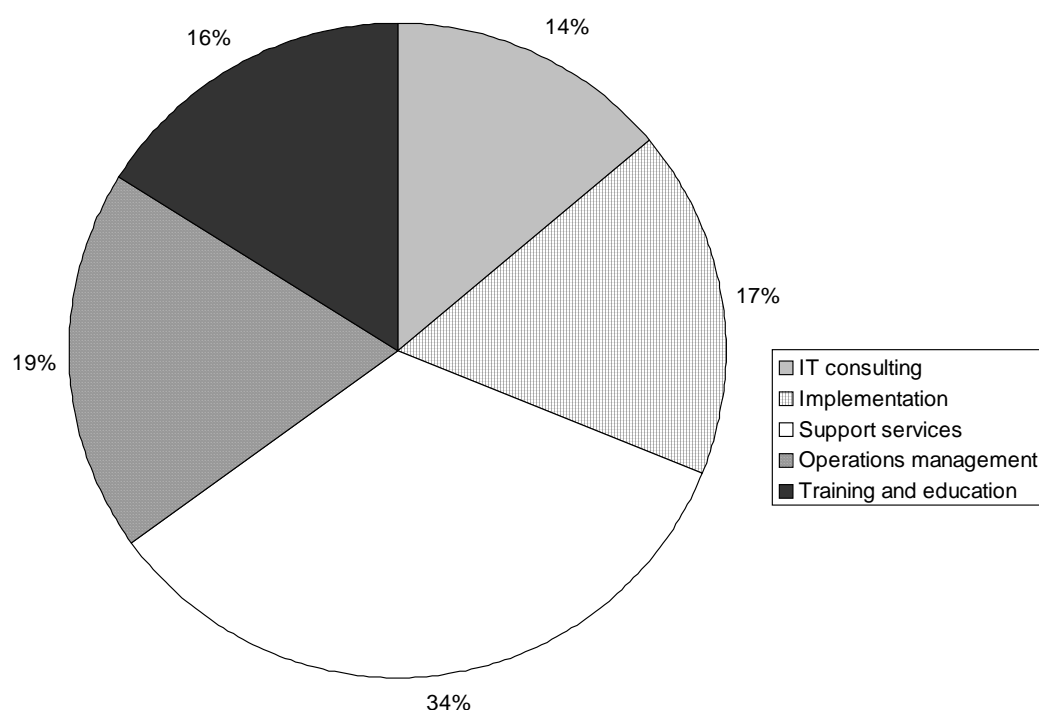
SOURCE: IDC 2003, as published in Microsoft's Growth & Opportunity Suite)

It is expected that the computer services industry in Egypt will continue to grow at a high rate because of increasing reliance on computers in all aspects of life. Compared to other sectors of the economy, the computer services sector is less affected by economic recession. It continues to grow at increasing rates. This growth can be attributed to four main factors:

1. *Improvements in the telecommunications network by Telecom Egypt*—renewing and developing switching and transmission facilities, renewing the local network using digital microwave links;
2. *Strong human resources*—academic education through the expansion of computer studies and professional training programs;
3. *Growth of high-tech communities*—professional IT environments that offer companies better access to infrastructure and synergies with other IT companies (e.g. Smart Village project); and
4. *More government officials devoted to IT promotion.*

Market Structure

The breakdown of the computer services sector by subsector and the relative weights of the subsectors are shown in Figure 6-2.

Figure 6-2*Relative Weights of Computer Services Subsectors**Source: International Data Corporation, 2002*

As Figure 6-2 shows, support services are the leading subsector in Egypt, accounting for more than 34 percent of the computer services value in the Egyptian market. Large companies dominate this segment of the computer services sector. Other subsectors account for between 14 and 20 percent of value.

The computer services market in Egypt is a monopolistic competitive market, where services provided by different companies are similar but not identical. Each company differentiates itself in terms of product and quality. Each company has some control over the pricing of its services. Although differences in quality, features, and price are not significant, none of the firms expects the other firms to behave as direct rivals, even if they operate in the same market. Although the companies provide similar services, each provides enough of a differentiated product that the rivalry is not clear-cut. None of the companies has complete control over the market, however. This situation has been reinforced in recent years by the movement towards a free market and low trade barriers.

In addition, the computer services market is a low-barrier-to-entry market, as evidenced by the number of companies operating—some 500 companies (IDC 2003). Most are small companies with less than \$2 million capital and fewer than 50 employees. Very few national companies, such as Raya, Orascom and Giza system, employ more than 200 employees or have capital investment exceeding \$10 million. A few multinational companies such as IBM, ICL (Fujitsu), Microsoft, and HP operate in Egypt with capital exceeding \$20 million and employ more than 100 employees.

The turnover of the companies operating in the computer services market, national and multinational (total revenue), is roughly \$326 million. On the basis of interviews with experts in the field we estimated the revenues generated by different types of providers of computer services (Table 6-1). The market share of each type of company is illustrated in Figure 6-3.

Table 6-1

Estimated Market Size, Computer Services, 2002 (\$ million)

CPC Code	Description	National Companies		Foreign Companies		Total value
		Domestic	Exports	Domestic	Exports	
841	Consultancy services related to installation of computer hardware	11	1	4	----	16
842	Software implementation services					
8421	Systems & software consulting services	16	3	6	2	27
8422	Systems analysis services	16	3	6	2	27
8423	Systems design services	16	3	6	2	27
8424	Programming services	16	3	6	2	27
8425	Systems maintenance services	12	1	5	3	21
843	Data processing services (Data center)	13	1		1	15
8432	Data processing & tabulation services					
8433	Time sharing services					
8439	Other data processing services					
844	Database services	3			2	5
845	Maintenance & repair services	33	6	44	5	88
849	Other computer services					
8491	Data preparation services					
8499	Training services	25		12	3	42
	Operation services	13		13	5	31
Total		174	21	102	29	326 ^a

aThis figure, which represents all IT service revenues in Egypt, includes the export element.

Source: Interviews with the Egyptian IT Association.

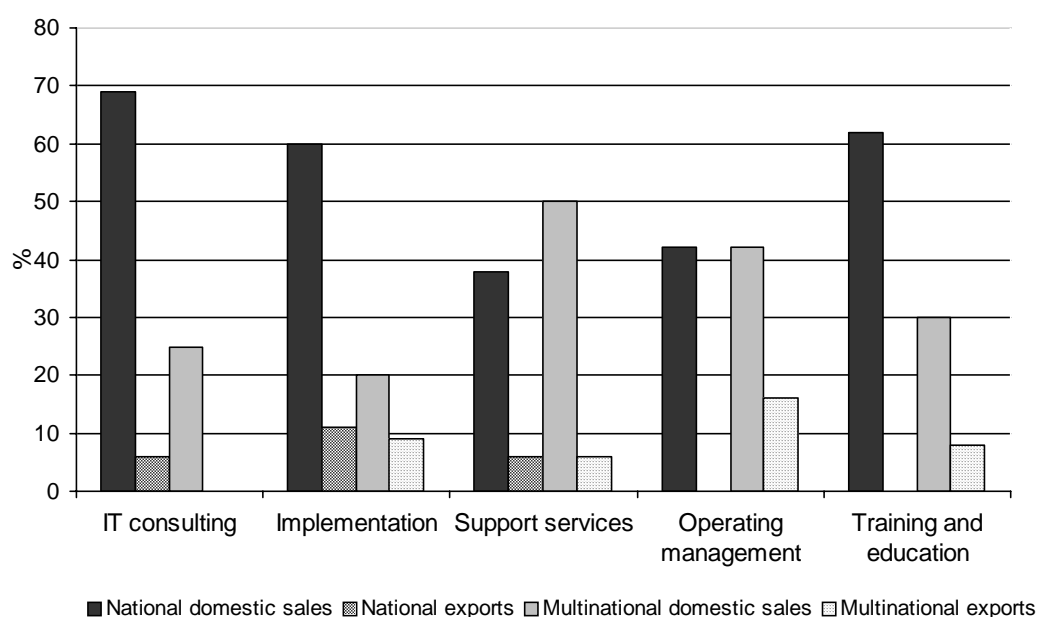
Figure 6-3*Percentages of Value of Services, 2002**Source: Interviews with the Egyptian IT Association*

Table 6-1 shows that national companies in the computer services sector dominate the market, with an estimated 54 percent market share. The percentage of national companies selling domestically is even higher: of 500 companies, 440 (88 percent of companies) sell services locally. The majority of these companies are relatively small, with capital ranging from \$150,000 to \$1.5 million.

In such a sophisticated market, one should distinguish between quality levels to understand market dynamics. On the basis of interviews with key players in the computer services sector, the market can be segregated into high-quality, medium-quality, and low-quality services providers.

High-quality computer services providers deliver advanced, sophisticated services. They target large companies and multinationals with more than 100 users. Customers of these providers typically are multinational companies and large companies with high quality standards. These customers choose multinational or large computer services company brand names to deal with only one entity for all IT services. This group represents about 10 percent of the market but possesses great purchasing power. This group's low price elasticity of demand (percentage change in quantity demanded is less than percentage change in price) is due to the low proportion of their funds spent on computer services, in that their purchases of services are not greatly affected by price changes. About 10 percent of Egyptian computer services companies provide such high-quality service and have captured 40 percent of the total market (in dollars).

Medium-quality computer services providers deliver moderately priced, medium- to high-quality services. They target small-to-medium-sized customers with 10 to 100 users. Major players in this segment are medium-sized local companies, mostly with technical support from multinational firms such as Microsoft and IBM. The customer base for this segment is relatively sensitive to price changes because of its lower income and moderate need for IT. To save money on services, medium-sized companies tend not to automate their work. Egyptian consumers also are not fully aware of the benefits of technology to business and believe that a fax machine, a photocopier, a filing system, and a good secretary can replace computerization. Yet they realize that automation will be essential in the future to survive in a freer and more competitive Egyptian economy, and many have begun to increase computer use. About 30 percent of the small and medium market is moving in this direction. This middle range makes up about 30 percent of the computer services consumer base and about 25 percent of computer services companies.

Low-quality computer services providers are characterized by low-quality, low-cost services. Small local companies, formal and informal, deliver these services. Their primary customer base is small private offices and businesses. Customers include small law offices, retail shops, and small consulting firms with fewer than 10 computer users, and households. The target consumer group for this segment is highly sensitive to price changes because it has relatively low revenues. These customers purchase only services that satisfy their basic technological needs and do not incur significant costs compared to their total expenses. The low-end provider makes up about 60 percent of the number of computer services companies and the consumer base represents only 35 percent of the market. Market shares can be summarized as follows:

Market Shares of Egyptian Computer Services Suppliers

	<u>% of Companies</u>	<u>% of Turnover</u>
High-quality services	10	40
Medium-quality services	30	25
Low-quality services	<u>60</u>	<u>35</u>
Total	100	100

Source: Interviews with local industry

Users of Computer Services in Egypt

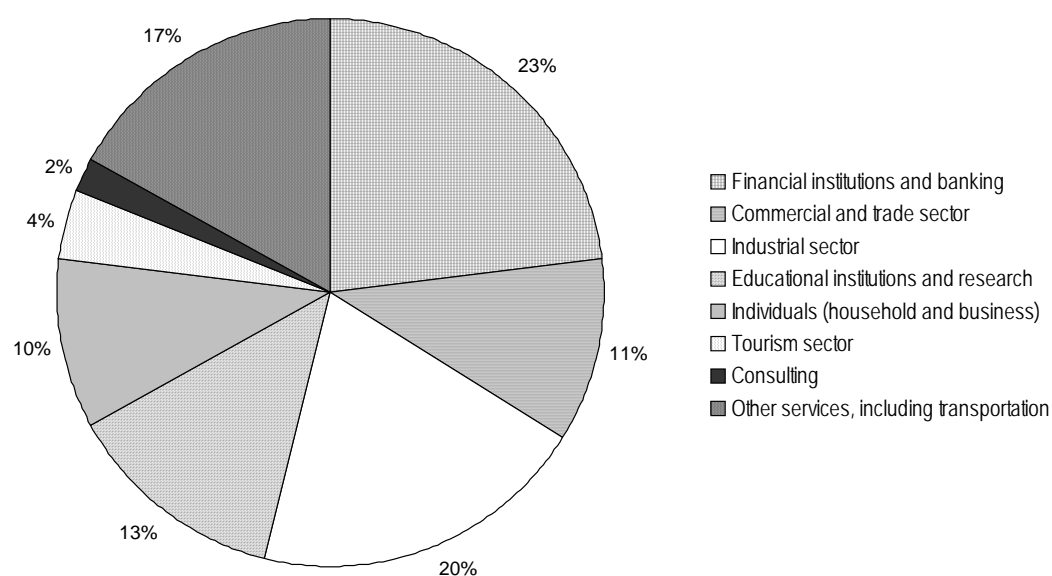
An important characteristic of the computer services sector is its integration with almost all sectors and activities in the Egyptian economy, resulting in a significant indirect effect on the economy. The financial services and industrial sectors are the biggest users of computer services in Egypt, and educational and research institutes and the commercial and trade sectors also use computer services. In general, multinational companies and large companies are important potential users.

Multinationals' network infrastructure often must meet home office standards so the local subsidiary can interact with the home office and subsidiaries worldwide. These

companies have very high international standards and prefer to deal with large companies that provide international standards of services.

According to research into the application of computer services in Egypt, rough estimates of the market shares of computer services users are illustrated in Figure 6-4.

Figure 6-4
Share of Computer Services Users



Source: Interviews with industry users

Interviews with large users of computer services in various sectors reveal that the factors that most influence decisions about computer services are quality/reputation, price, after-sales service, and terms of payment. The degree to which these factors affect demand varies from one sector (or user) to another. Table 6-2 summarizes the results from a small sample of users.

Table 6-2*Relative Importance of Factors Affecting Demand in Various Sectors (%)*

Factor	Financial, Brokerage, and Consulting	Trading	Other Services^a	Industrial
Quality/Reputation	35	25	40	30
Price	25	35	25	35
After Sales Service	25	20	25	20
Terms of Payment	12	16	8	10
Others	3	4	2	5
Total	100	100	100	100

^a These numbers should be considered very subjective, as there are certain to be differences in size, needs, etc. of users within the listed sectors, which affect their perceptions of quality/reputation, price, after sales service, etc.

Source: Interviews with computer services users

Price is a decisive factor, especially during a general economic recession when demand is more elastic, and given consumers' lack of awareness of or confidence in automation.

Although quality and reputation are interpreted differently from one sector to another, reliable high-quality services and after-sale services are considered key factors in all sectors, including sectors other than financial and consulting, such as tourism, transportation, commerce, education, and health. However, for the financial, consulting, and other services sectors, quality and reputation are the most important factors. This can be attributed to the number of large companies and multinationals operating in the sector.

Economic Contribution

Computer services contribute to the Egyptian economy in many ways, with value added, employment, and foreign exchange being the most important. Despite the fact that the computer services sector in Egypt is small (0.4 percent of GDP)³³ with a limited direct effect on key macro-parameters, it has a significant positive indirect effect on the Egyptian economy. Therefore, it is important to examine both the direct and indirect effects (multiplier effect). Three basic effects are considered: value-added contributions, employment, and foreign exchange. Because of data limitations, the results of the analysis should be considered conservative; the actual impact is probably larger.

VALUE-ADDED EFFECT

Value-added contributions of the computer services sector are high. Computer services represent more than 80 percent of the value of gross output, giving a value-added

³³ The value added of the services sector (\$261 million) divided by Egypt's GDP in 2002.

coefficient of 0.8.³⁴ This means that for every dollar of gross output, the computer services sector generates 80 cents of value added.³⁵

In addition, computer services have indirect effects on value added through the multiplier effect. Computer services are linked tightly to other businesses such as financial institutions, consulting firms, commercial business, transportation, and the industrial sector. We calculated the value-added multiplier effect of the underlying sectors in Egypt by estimating both contributions of the computer services sector to the related businesses and the value added of these businesses. A summary of findings is presented in Table 6-3.

Table 6-3
Indirect Value Added Effect

	Contribution Factor	Value Added Coefficient	Indirect Value Added for Computer Services (contribution x value added)
Financial Institution and Banking	0.2	0.7	0.14
Commercial and Trade Sector	0.15	0.4	0.06
Industrial Sector	0.1	0.6	0.06
Service Sector	0.15	0.3	0.045
Tourism Sector	0.05	0.65	0.0325
Consulting	0.3	0.8	0.24
Others	0.15	0.5	0.075
Total			0.6525

SOURCE: Contribution factor from interviews; value added coefficient from national accounting data.

According to this analysis, the value added, direct and indirect, generated from one dollar of gross output in computer services is estimated at \$1.45. The computer services sector contributes to other sectors by supplying them with services. Such services contribute to the value added of these sectors (value-added coefficient). The value-added coefficient in the financial sector, for example, is 0.7, or 70 percent, of which computer services contribute 20 percent, making a net contribution of 0.14, or 14 percent. The total indirect effect of the computer services sector in creating value added is 0.65. The direct effect is 0.8. Both together would induce a total effect of 1.45. Or, one dollar of gross output in the computer services sector would contribute \$1.45 to value added.

³⁴ Source: Interviews with Egyptian IT companies.

³⁵ Value added is the difference between gross domestic output and inputs used (purchased from other units). Value added co-efficient is a ratio of value added to gross output. 0.8 means that if the value of gross output of computer services is LE 100 million, a value added of LE 80 million will be generated.

EMPLOYMENT EFFECT

Direct employment in the computer services sector in Egypt is estimated at 23,000 employees (including professionals), of which about 8,000 work in the informal sector. However, the industry is tightly linked with other sectors and is therefore capable of creating more jobs indirectly. The number of companies applying software in Egypt is roughly estimated at 35 percent of the total number of companies (public and private). They employ 16 percent of the urban labor force, or 2.24 million people. The contribution of computer services to other industries' employment, according to industry experts, is roughly estimated at 6 percent, or 134,400 employees. This implies that every one direct job in computer services creates or supports about six jobs in related industries and businesses. Hence, the computer services sector creates about 157,400 jobs directly and indirectly. Most of these jobs are highly skilled. In this respect, the computer services sector contributes to the development of human resources in Egypt and therefore improves productivity.

FOREIGN EXCHANGE EFFECT

The computer services sector is not an export-oriented sector in Egypt. Most of its sales are channeled to the local market. Nevertheless, the sector has great potential to become a large foreign exchange earner. Exports of the computer services sector in Egypt represent 8 percent of gross output of the whole IT sector, i.e. \$50 million. This is in addition to the indirect effect, i.e. the contribution of computer services on export-oriented sectors such as oil, chemicals, processed food, and tourism. Information on the multiplier effect is not available. According to experts in the field, the multiplier effect could reach 4, giving total exports, direct and indirect, a value of about \$250 million. This would represent a very small proportion of the value of Egyptian exports (about 2 percent).

But developing the IT industry would attract foreign capital and therefore generate foreign currency. Foreign capital invested in computer services in Egypt during the last four years exceeds \$600 million, i.e. an average of \$150 million per annum. Hence, one might conclude that the computer services sector in Egypt has both direct and indirect impacts on value added, employment, and foreign exchange as follows:

- *Value-added.* The sector has a direct effect on 80 percent of gross output and an indirect effect on 65 percent of gross output. Every \$1 of gross output generates value added (direct and indirect) of \$1.45, in that the generated value added of computer services is estimated at \$473 million (2002). Gross output of computer services is \$326 million (noted above) multiplied by 1.45, or \$472 million.
- *Employment.* With a multiplier impact of six jobs created indirectly for every one created directly, the computer services sector creates some 157,000 jobs (directly and indirectly).
- *Exports.* Every \$1 from exports of computer services can translate into \$5 (\$1 as direct and \$4 indirect) in overall increase of Egyptian exports. The direct effect is \$50 million

and the indirect effect is \$200 million. This is in addition to the inflow of foreign capital of \$150 million annually.

The following summarizes the economic impact of computer services:

	<u>Direct</u>	<u>Indirect</u>	<u>Total</u>
Value added (Value Added Coefficient)	0.8	0.65	1.65
Employment (Number of employees)	1.0	6.00	7.00
Exports (\$ million)	50	200	250

Strengths, Weaknesses, Opportunities, and Threats Analysis

According to research conducted for this study and the information technology study conducted by the American Chamber of Commerce in Egypt, the following strengths, weaknesses, opportunities, and threats have been identified in the computer services sector:

STRENGTHS

- Lack of barriers to trade in IT as a whole opening Egypt to the global base of IT knowledge— a vital component of success in the very competitive world of computer services.
- Growing demand resulting from large-scale projects in the financial, telecommunications, energy, and manufacturing sectors as well as an increasing level of automation in the government.
- A young, educated labor force and a low cost of labor (especially after the recent currency devaluation) that enable cost-effective packages to be offered at competitive prices.
- Egypt's strategic location as the gateway to the Arab and African markets
- Time zone difference between Egypt and North America enable a second work shift for North American companies.
- A majority of computer services providers know both English and Arabic.
- Access to a high-speed communications network.
- Investment incentives and tax exemptions.

WEAKNESSES

- Lack of business development services in the computer services industry.
- Shortage of IT graduates with managerial and entrepreneurial skills who can fill the market needs.

- Focus by the private sector and public procurement sectors on price in general rather than quality of service.
- Lack of financial schemes to support start-up computer services companies (particularly for small and medium enterprises).
- Lack of individual consumer base for computers and computer services.
- High price sensitivity for SMEs in computer services purchases.
- General bureaucracy and difficulties in licensing companies (for all types of businesses).
- Lack of targeted export promotion program.

OPPORTUNITIES

- Development of a clear and flexible strategic vision for Egyptian computer services through a joint public-private sector endeavor that will be reviewed on an ongoing basis.
- Creation of the Pyramids Smart Village to centralize Egypt's qualified labor and infrastructure to compete globally in the free market.
- Implementing training programs to increase the number of qualified computer services providers.
- The currency devaluation— a short term opportunity — could help companies promote exports while protecting providers of local services sector (if companies act immediately).
- Creation of a national legislative environment to encourage foreign direct investment in the sector.
- Attracting international producers interested in subcontracting programming of tailored applications.
- Providing online content for the Middle East and North Africa.
- Growing demand for application development, hardware and software installation, system/network implementation, and network integration from Egyptian companies needing to improve their operation systems.
- Going beyond the Arab markets to build a strong presence in the European and American markets for more and faster transformation of technology.
- Establishing an export development organization responsible for promoting computer services exports and assisting developers and producers in marketing services globally.
- Making funds, aids, and financing facilities available to the local industry.
- Establishing R&D base depending on the academic and research institutions.

THREATS

- Widening supply gap in well-trained human resources due to the ongoing brain drain.
- Fear of foreign competition leading to reactionary protectionism while the computer services sector (and all IT sectors) thrives on the global exchange of ideas.

In considering Egypt's strengths and weaknesses, it is useful to compare Egypt to its major competitors. Table 4 compares Egypt, India, and Ireland. As the table makes clear, Egypt needs to stimulate external and internal demand (through export promotion, local consumer development), develop a national strategy, expand to non-Arab markets, increase clustering (or ensuring access to trade) to stimulate thinking, and leverage human resources.

Table 6-4
Success Factors: Comparison of Computer Services Markets

Factor	India	Ireland	Egypt
Demand	High external demand; weak domestic demand	High external demand; weak domestic demand	Weak external demand; weak domestic demand
National Vision and Strategy	Present: software services; then climbing the value chain	Present: Product-related services for multinationals, then diversification	Not present: Only a generic short term ICT plan
International Linkages and Trust	Diaspora and state-funded links: reputation and trust partly through ISO and anti-piracy	Diaspora and state-funded links: reputation and trust partly through ISO and anti-piracy	Only in Arab markets and very few in the United States and through individual initiatives
Software Industry characteristics	Some competition: clustering and collaboration	Some competition: clustering and collaboration	High competition and no clustering. Future plan with Smart village project.
Domestic Input and Infrastructure	Strong, low-cost human capital; catching up in telecommunications; access to capital; limited R & D success	Strong human capital; strong telecommunications; access to capital; some R & D base	Strong, low-cost human capital; strong telecommunications; no access to capital; no R & D base

Effect of Egypt's Membership in the Information Technology Agreement

Computer services are not subject to tariffs or custom duties. Still they are affected by tariffs imposed on the inputs imported by the sector. According to the WTO Information Technology Agreement, which Egypt is party to, Egypt is committed to reaching zero tariff on the bulk of IT goods by 2005. The average tariff rate is expected to be reduced by 70 percent in 2004.

The removal of the tariffs on imported inputs for the computer services sector will reduce the cost of offering computer services, allowing companies to reduce prices, and therefore

expanding the market and capturing a larger market share. Tariffs represent about 3 percent of the total cost of computer services. The cost of imported inputs is 20 percent of total cost, with an average tariff rate of 15 percent (2002). Providers and users can share a reduction of cost. Because demand for computer services tends to be inelastic with respect to price (at least for medium- and high-end users), a small portion of the cost reduction will be passed to the user. With inelastic demand, no more than one-third of the cost reduction will be passed on to users—that is, the provider captures most of the cost reduction. It therefore can be expected that (1) price will be reduced by 1 percent, resulting in sales higher by 0.9 percent, according to our estimate of price elasticity of demand (as price is reduced by 10 percent, demand will increase by 9 percent only); and (2) the value-added coefficient will increase from 0.8 to 0.814 (increase of 1.8 percent).

The removal of tariffs is therefore expected to increase the value added of computer services from \$261 million to \$268 million—\$ 7 million, or 2.7 percent—with all other things being equal. The expansion of the sector due to price reduction would increase jobs by 1 percent (i.e., 230 jobs), with all other things, including technology, being equal. Furthermore, liberalizing the sector would enhance the potential for exports.

The direct effects of removing trade barriers in the computer services sector appear insignificant. Still, if the indirect effects are considered, the total effect is as follows:

	<u>Direct effect</u>	<u>Indirect effect</u>	<u>Total effect</u>
Income in value added	2.7%	1.9%	4.6%
Job creation (no. of employees)	230	1,380	1,610

Foreign exchange is closely related to trade barriers and trade liberalization. The liberalization of the foreign exchange market (i.e., floating the Egyptian pound) could be expected to affect computer service imports and exports. The depreciation is likely to protect the domestic computer services industry (economic barriers), allowing local industry to have larger share in the market. It is also likely to have positive effects on both value added and employment. This is unlikely to be significant because imported computer services are less than 10 percent of the total value of computer services. But the computer services industry will have opportunities for exporting. On the basis of interviews with top managers in the market, we conclude that depreciation of local currency is likely to more than double exports (i.e., an increase of \$50 million per annum).

7. Legal Issues Affecting Egypt's Potential Commitments in Computer Services

Another step in evaluating the utility and viability of commitments in the computer services sector is analyzing Egypt's legal regime. Policymakers need to understand not only which laws will be affected by a WTO commitment, but also which may need to be preserved in a GATS schedule. Although no laws govern the computer services sector in Egypt, three cross-sector business laws may affect the computer services sector:

- Labor laws governing foreigners work in Egypt;
- Investment laws and incentives governing establishment of companies and corporations; and
- Taxation laws.

The implications of intellectual property laws also merit consideration.

Egyptian Labor Law Governing Foreigners

An analysis of Egyptian labor law is relevant for determining if any barriers affect the movement of natural persons. Mode 4, discussed earlier, allows for the temporary movement of personnel. The GATS allows Egypt to retain existing measures concerning licensing and entry. Egypt already has reserved important provisions based on the previous labor law that retained limitations on the number of non-Egyptian employees in any establishment (not to exceed 10 percent of the total work force for unskilled or semiskilled workers).

New reservations would be considered a worsening of Egypt's schedule of commitments. Nevertheless, Egypt can negotiate as many restrictions as necessary to stay in line with existing policy.

CURRENT SITUATION

Labor Law No. 12 of 2003 regulates the Egyptian labor market. This new law, unlike the previous law, leaves it to the discretion of the relevant ministry to accord, reject, or cancel work permits for foreigners or exempt foreigners from the need to obtain permits.

Foreigners need to obtain a work license from the relevant ministry to perform work in Egypt. They also need to have been permitted to enter the country and to reside in it with the objective of working. The relevant minister determines conditions that need to be fulfilled before a work license is issued. The minister also determines procedures, information needed, renewal process, and fees charged for licenses (no less than 1,000 Egyptian pounds). The minister also determines conditions for revoking work licenses, as well as conditions for exempting foreigners from the need to obtain work licenses.

IMPLICATIONS OF A COMPUTER SERVICES BINDING

It is too early to determine whether the new labor provisions will be more or less restrictive in effect than the old ones. However, if a minister does place restrictions on foreigners in a service entity, which reduce Egypt's WTO commitments (i.e., where the intent or effect of restrictions placed by the minister is that the proportion of foreign personnel in an entity cannot exceed, for example, 5 percent of total personnel), Egypt could be found to be noncompliant with its WTO obligations.

Nevertheless, a flexible labor policy towards foreign workers might allow the computer services sector to take advantage of industry experts worldwide. This is unlikely to have a negative effect on employment opportunities for Egyptians. Expatriates are usually integrated with local professionals. Indeed, one would expect that this would have positive effects in terms of enhancing knowledge and professionalism, and would also help in improving training and research and development.

Open doors for foreign employees will not affect Egyptian employees in computer services. In fact, it could be argued that while Egypt has had virtually no restrictions on foreign IT workers, its computer services sector has only become more competitive—its competitiveness being affected most by the global economic downturn and internal issues, including lack of trained personnel and burdensome administrative procedures.

Egyptian technicians and professionals in the IT industry can easily compete at the international level if they receive training on the rapid changes in the industry and if management efficiency is improved. But salaries of mid-level technicians and professionals in the IT industry in Egypt are much lower than salaries abroad. Therefore removing restrictions on foreign employment is unlikely to have a negative effect on employment of mid-level technicians and professionals in the computer services sector.

Any anticipated limitation would need to be worked specifically into the Temporary Movement of Personnel commitment on computer services.

Investment Laws and Incentives

The GATS mode of supply “commercial presence” (explained in Section 3) may be affected by investment laws.

EGYPTIAN LAW

Law 8 of 1997. This law made one authority responsible for investor incentives and guarantees – the General Authority for Investment and Free Zones (GAFI). It also grouped some 20 exemptions and incentives under one law, and specified activities that would automatically accrue benefits to investors. It allows 100 percent foreign ownership of ventures and guarantees the right to remit income earned in Egypt and to repatriate capital. Key provisions include:

- The guarantee against confiscation, sequestration, and nationalization
- The right to own land
- The right to maintain foreign currency bank accounts
- Freedom from administrative attachment
- The right to repatriate capital and profits
- Free hiring of Egyptian staff
- Absence of price control or restrictions
- Exemption of foreign expatriates’ salaries from income tax if they reside in Egypt for less than a year
- Equal treatment regardless of nationality
- Five years of tax exemption on the revenues of the commercial and industrial activities or tax on stock companies’ profits
- Ten years of tax exemption with respect to companies and establishments created in the new industrial zones and the new urban communities as well as in remote areas
- Twenty years of tax exemption for companies maintaining their activities outside the Old Valley.

Under Law 8, investments are approved automatically for projects in 16 fields, effectively creating a “positive list” in which computer and software production is included. In April 2000, new activities were added to the package of incentives, including software design, production of electronics, and establishment and management of technology zones.

Laws and procedures regarding the establishment of companies: The laws and procedures concerning the establishment of companies and operation licenses in Egypt apply to all sectors, in that no specific laws regulate the computer services sector. The three laws that govern the incorporation of companies in Egypt are

- The commercial code of 1883 amended by Commercial Code no. 17/1999 that governs the incorporation of partnership companies,
- Companies Law no. 159/1981 governing the incorporation of capital companies, and

- Investment Guarantees and Incentives Law no. 8/1997 regulating the incorporation of partnership and capital companies and establishment of sole enterprises.

These laws and regulations are highly restrictive and have long and exhausting procedures. Five core problems or obstacles have been identified:

- Absence of transparent listings and / or published information on the sequence of procedures, specific documents required, and steps / means to obtain these documents, mostly in the relevant government entities such as the district.
- Burdensome administrative procedures for establishing operations and obtaining licenses, mostly in terms of repeated visits for the same task, in addition to the redundancy in documents or procedures required by different government entities and the lack of coordination between these entities.
- Absence of incentives for government employees to perform in an efficient manner. They are underpaid and have limited office space and poor equipment.
- Lack of automation, which implies the absence of computerized databases as well as the use of manual processes.
- Lack of proper training for old and new employees.

Recently, the government has recognized the urgent need to streamline regulations, ease the main obstacles that entrepreneurs face, and liberate Egyptian society from legal and regulatory constraints.

This streamlining is expected to ensure awareness and transparency, improve efficiency, and create incentives. This will encourage companies to establish computer services companies rather than operate as individuals and will encourage existing informal companies to establish legal and formal operations. Streamlining regulations also will help expand the computer services market (even significantly) and contribute to the improvement of efficient operations.

Implication for Computer Services Commitment. Although bureaucracy can be a de facto barrier to trade, it is not a GATS violation. Licensing procedures should not be burdensome, but they may exist. A GATS commitment would mean that the Egyptian Government could not impose restrictions in the computer services area for investment at some point in the future. On the other hand, even the most liberal GATS commitments would have no effect on investment if other complementary policies, including streamlined administrative procedures, are not in place.

Companies Law 3 of 1998. Law 3 of 1998, amending law 159 of 1981, covers investors in any sector not covered by Law 8 of 1997, including shareholders, joint stock, and limited liability companies and representative and branch offices. It provides for the right of petition for denial of incorporation, removes the restriction that 49 percent of shareholders

must be Egyptian, allows 100 percent foreign representation on the board of directors, and redefines accounting standards.

Implication for Computer Services Commitment. The requirement to have at least 49 percent Egyptian ownership would need to be reported in a GATS commitment, and reporting this in a commitment would prevent the government from increasing the Egyptian shareholder requirement in the future. But this would likely be taken as a horizontal restriction (applying to all sectors), not a restriction on the computer services sector.

Free Trade Zone Regulations. Investors may carry out projects in Egyptian free trade zones, regulated by the Investment Law. Most goods and materials imported into the zone are not subject to import duties or regulations.

There are two types of free zones: public and private. Public free zones are established in specific locations by GAFI. Such locations include areas in Alexandria, Suez, Port Said, and Cairo. Private free zones are established exclusively for a specific project or company. The types of activities permitted in free zones are mixing, blending, repackaging, manufacturing, assembling, processing, and repair operations.

A company operating in a free zone is exempt from all Egyptian taxes for an unlimited period. However, free zone projects are subject to a duty of 1 percent of the value of goods entering the free zone for storage in respect to manufacturing and assembly projects. Projects maintaining activities that require no entry or exit of goods are subject to an annual fee equal to 1 percent of their total revenue, based on audited accounts.

Implication for Computer Services Commitment. As long as the rule applies equally to foreigners and locals, there is no need to mention the fee in Egypt's schedule of commitments. Issues may arise as the subsidies discussion evolves at the WTO.

Taxation

Most forms of taxation are not covered by GATS rules. Taxes are covered to the extent that a sector is bound in a country's schedule of commitments and to the extent that there is a clear discrimination between local providers and foreign providers. Taxes can only be looked at in the national treatment context. The GATS also explicitly excludes the following taxes from national treatment coverage under Article XIV on General Exceptions: "d. inconsistent with Article XVII [national treatment], provided that the difference in treatment is aimed at ensuring equitable or effective imposition or collection of direct taxes in respect of services or services suppliers of Other Members."

Furthermore, this text has a footnote stating

Measures that are aimed at ensuring the equitable or effective imposition or collection of direct taxes include measures taken by a Member under its taxation system which:

- (i) apply to non-resident services suppliers in recognition of the fact that the tax obligation of non-residents is determined with respect to taxable items sourced or located in the Member's territory; or
- (ii) apply to non-residents in order to ensure the imposition or collection of taxes in the Member's territory; or
- (iii) apply to non-residents in order to prevent the avoidance or evasion of taxes, including compliance measures; or
- (iv) apply to consumers of services supplied in or from the territory of another Member in order to ensure the imposition or collection of taxes on such consumers derived from sources in the Member's territory;
- (v) distinguish services suppliers subject to tax on worldwide taxable items from other services suppliers, in recognition of the difference in the nature of the tax base between them; or
- (vi) determine, allocate or apportion income, profit, gain, loss, deduction or credit of resident persons or branches, or between related persons or branches of the same person, in order to safeguard the Member's tax base.

Tax terms or concepts in paragraph (d) of Article XIV and in this footnote are determined according to tax definitions and concepts, or equivalent or similar definitions and concepts, under the domestic law of the Member taking the measure.

Therefore, taxes excluded from national treatment obligations are direct taxes – generally understood to be income taxes or personal taxes. Covered taxes would be discriminatory sales taxes. For example, a VAT that is applied only to nonresident companies or to foreign companies would be considered discriminatory.

In addition, negotiators currently are evaluating and debating disciplines for subsidies. To the extent that a tax provides a subsidizing effect to a services industry, it may or may not in the future be considered inconsistent with GATS disciplines. Taxes with subsidizing effects should therefore be considered in this analysis.

We examined the tax regime in Egypt to determine if any tax structures may prove problematic in the future for taking a computer services commitment. The first tax is corporate income tax. It is likely that corporate income taxes would be exempt. Nevertheless, we did examine the corporate tax structure as well as the other Egyptian tax structures and summarize their salient features.

Corporate income taxes:

- Branches of foreign entities operating in Egypt are subject to the same corporate income taxes and tax exemptions as their Egyptian counterparts.
- If a branch of a foreign company fails to keep proper books, the Egyptian tax authorities will seek to assess tax on a proportion of the foreign company's worldwide profits.

- No withholding tax is imposed on a branch on its payments to its head office abroad or on dividends paid by the locally incorporated subsidiary to its foreign parent company. It is not usually possible to set up a branch under Investment Law No. 8/1997, except in the free zones.
- Dividends and interest received from abroad, and the net of foreign taxes paid, are subject to the tax on moveable funds at 32 percent. Citizens from countries having double taxation treaties with Egypt are treated in accordance with these agreements. In the absence of a tax treaty, unilateral tax relief is available by way of deduction rather than by tax credit.
- Any business operating in Egypt must withhold against payments made to any contractor or supplier of goods or services. The basic percentage for services is 3 percent.

Even if corporate taxes were covered, it is unlikely any of these measures would be considered discriminatory. They are consistent with other countries' tax regimes.

Personal income tax. Personal income taxes are exempt according to the general tax exemption for direct taxes, so we did not evaluate them.

Sales tax. Sales taxes may be covered by the GATS if a sector is bound under national treatment and if the tax is an indirect tax and inconsistent with national treatment. In our review of Egyptian law, we found no discrimination. However, if services destined for export are tax-exempt, this could violate the new disciplines on subsidies (although those discussions are ongoing).

Customs tax. It is expected that the majority of IT imports will enjoy free entry (zero custom duties) as of 2005 in accordance with Egyptian obligations under the Information Technology Agreement. Exemptions will be granted to the remaining items starting in 2007.

Social insurance contributions. It is unclear whether social insurance contributions would be subject to the GATS. Although they seem to qualify for the general exceptions carve-out, the Indian delegation in a recent paper to the WTO raised mandatory social insurance contributions by temporary workers as a potential barrier to trade. Egypt may want to consider this issue, particularly if it "exports" more of its own computer workers. Egyptian social insurance laws do not generally apply to expatriate staff, and so should not constitute a GATS barrier.

8. Potential Impact of GATS Computer Services Commitments on Egypt

Before considering the impact of computer services commitments on Egypt, we consider how bindings and open, liberal trade regimes in computer services have affected other markets.

Other Countries' Experiences with GATS Commitments in the Computer Services Sector

BENEFITS OF LIBERALIZATION GENERALLY

The computer services sector is notable for the absence of protectionism worldwide. Successful computer services industries attribute the lack of government intervention to its success. NAASCOM, the lead Indian software and services association, highlighted the lack of government involvement in the IT sector as a key ingredient to its success.³⁶

Yet government incentives to promote the sector have proven successful in some markets. For example, Singapore and Malaysia have lowered taxes and enabled certain financial incentives. The results have been steady growth and a vibrant IT sector in both markets.

IMPACT OF BINDING COMMITMENTS

Because the sector is so liberal, it is difficult to identify countries that have undertaken liberalizing commitments for comparison. Instead, this study evaluated the countries that made binding commitments in the WTO, comparing the size of their markets in 1996 when commitments were effective to the size of their markets today. Producing a

³⁶ NAASCOM's Services Industry Report.

comprehensive economic analysis was still difficult, and we relied finally on anecdotal information, comparing countries' GATS schedules to computer services growth rates.

India, an important competitor in this field, made commitments in the computer services area in the Uruguay Round. Clearly India has seen its services sectors grow since the commitment was made. CAGR for India 1995–2001 was 11.4 percent (18.6 percent in local currency) for the computer services sector.

Of the eight countries reviewed in Section 2, Egypt has made no commitments and Saudi Arabia is not a WTO member. Countries with full, unrestricted commitments included Turkey, Israel, and South Africa. CAGRs during 1995–2001 were 39.3 percent for Turkey (135 percent in local currency), 13.5 percent for Israel, and 9.5 percent for South Africa. Kuwait, Malaysia, and Indonesia all made commitments in the sector but applied some form of limitation. (All of the barriers were general investment restrictions, not sector-specific restrictions.) Despite these limitations, Kuwait and Malaysia saw growth in the computer services segment of the IT sector: Kuwait at 16.5 percent CAGR and Malaysia 7.9 percent. Indonesia's computer services segment decreased, with a -12.4 percent CAGR. Of the three schedules, Kuwait's was the least restrictive and Indonesia's was the most restrictive. Indonesia's significant decline is likely attributable to its political instability during the period concerned rather than to effects of the trade agreement.

Computer services schedules of commitments for China, Czech Republic, EC, Hungary, India, Indonesia, Israel, Jordan, Korea, Kuwait, Malaysia, Morocco, Oman, Pakistan, Qatar, Singapore, South Africa, Thailand, Turkey, U.S., and Venezuela are shown in Appendix D. Together, they show a range of commitments that have been taken with respect to computer services, which might be instructive to Egypt. Some observations can be made from those schedules as follows:

- It is typical for all countries to maintain limitations in Mode 4 Movement of Natural Persons. It would not be a problem for Egypt to maintain its horizontal commitment on personnel limitations. However, it may wish to seek relaxation of Mode 4 limitations from its partner countries to provide opportunities for Egyptian services providers.
- Some countries which have had success in attracting investment in computer services, e.g. South Africa and Israel, maintain no market access or national treatment limitations on computer services (except Mode 4).
- Many countries with successful or growing computer services industries, including China, Czech Republic, Hungary, Korea, Singapore, and Venezuela maintain no market access or national treatment limitations on computer services (except Mode 4).
- Other computer services success stories, however, including India, Malaysia, and Thailand do maintain market access and national treatment limitations (other than Mode 4) on computer services. Some countries, including Thailand, chose to leave Mode 1 (cross-border supply) unbound for both market access and national treatment for all computer service sub-sectors. This is probably because, though cross-border transactions (e.g. emailing architectural plans, online help desks, and emailing

programs, etc.) are hard to track, some countries are still trying to determine how to address them for a legal perspective. Others, such as Malaysia, maintain ownership limitations for foreigners on Mode 3 (commercial presence).

- Though India did not make extensive computer services commitments, its industry is almost completely export-oriented and has no trouble raising capital or attracting investment.
- In the region Jordan and Oman maintain no limitations on market access and national treatment (except on Mode 4), while Morocco, Qatar, and Kuwait made more limited commitments.

With few exceptions, it appears that countries that are most aggressive in trying to promote competitive computer services sectors have made extensive computer services commitments.

Potential Impact of GATS Computer Services Commitments on Egypt

Most often, a country's computer services commitments in the WTO are one component of a more comprehensive IT strategy, which might include elimination of customs duties on IT products, promoting investments in telecommunications, lowering administrative barriers, etc. Egypt, in addition to its adopting an IT strategy (even if some consider it somewhat general), became a member of the WTO Basic Telecommunication Agreement and the Information Technology Agreement in 2002. Therefore, making computer services commitments in the WTO would complement these efforts. In other countries binding GATS commitments in computer services has generally coincided with sustained growth in domestic computer services markets, which could be due to the fact that these commitments are usually one component of a multi-pronged IT strategy. Certainly, computer services commitments do not appear to have harmed local computer services industries.

Statistically, a vibrant computer services industry benefits Egypt's economy (value added effects described in Section 6). A legally binding commitment could help stimulate those benefits. Because the sector is already open, vibrant, and economically healthy, we anticipate no immediate substantial economic impact, positive or negative. In the long term, the inflow of capital from a GATS commitment could help the sector.

Many factors affect the growth of the computer services sector in Egypt but almost all of them are domestic or international macroeconomic factors. A commitment is likely to have little or no immediate impact on the sector, and what impact it does have will be positive in terms of value added, employment, market size, and exports. Liberalizing the sector is expected to create an environment that will encourage and attract foreign direct investment. In the long term, the influx of capital that will come when investors are assured of Egypt's international legal commitment should help the sector.

The computer services sector will have an assurance of sustained access to vital international resources and knowledge. The computer services sector in Egypt is already liberal and open. That is, operating companies are privately owned, with no government intervention in pricing. Foreign skilled labor can generally visit the country on a temporary basis without restrictions. This openness is one of the major factors we attribute to the growing success of Egypt's computer services industry. Like other successful computer services markets worldwide, Egypt's computer services industry thrives on access to global information and resources. Absent access to the daily changes in technology, the Egyptian computer services industry loses a vital input. This is one that not only thrives on access to foreign markets, it requires that access to sustain viability. A liberal open sector is good for the industry.

There will be no major legal changes for Egypt. Investment, temporary entry, and tax restrictions can be, and have been, maintained. Restrictions in Egyptian law, such as the requirement that 49 percent of shareholders be Egyptian, apply across the board to all services industries. In addition, ministers can apply limitations on the number of natural persons entering the country. These horizontal legal issues aside, there are no sector-specific legal impediments to trade in computer services. Therefore, a binding commitment to computer services in a GATS schedule of commitments would simply ensure that the existing open, liberal situation is sustained. Commitments would provide trading partners with the assurance that investments made in this sector in Egypt will be protected.

A commitment may prevent Egypt from developing discriminatory subsidies at some point in the future. Depending on how GATS discussions on subsidies progress, a commitment may limit Egypt's ability to provide subsidies that discriminate or offer an advantage to Egyptian services exporters. Given the current absence of disciplines in this area, Egypt would face no actual constraints at present and would only take on these disciplines if it agrees to do so at some point in the future.

A commitment positions Egypt to negotiate legally binding commitments from its trading partners in this area, thus helping the computer services industry export to other markets. In making this legally binding obligation, Egypt is better positioned to ensure its trading partners do the same. This provides Egyptian industry with the legal assurance that investments made in foreign markets will be respected. It ensures that barriers to entry are removed and Egyptian companies can compete better.

A commitment provides foreign investors with the reassurance that Egypt intends to maintain an open market, thus encouraging investment. When foreign investors evaluate where to put their money, they observe a number of trends and international legal obligations. A country's WTO commitments are one consideration.

Because the market is already open, this is an easy bargaining chip for Egypt to put forward in the WTO negotiations. Other countries want Egypt to bind the sector and it costs Egypt very little to do so.

9. Recommendations

Considering (1) the strengths and weaknesses of Egypt's computer services market; (2) the critical role of free trade, including Egypt's membership in the WTO Information Technology Agreement, in ensuring access to global technology resources in the development of a vibrant global IT industry; (3) the number of countries that have taken commitments and benefited (or not been harmed) by the commitments; and (4) Egypt's strong and vibrant IT computer services sector, we recommend that Egypt undertake full and binding obligations to trade in computer services.

Furthermore, given the changing structure of the IT industry, the convergence of different segments, and the movement toward a higher level of commitment by other member states in the GATS, we recommend that Egypt take the broadest possible commitment. This includes the highest number of subsectors covered (or binding of the full category of computer services with category 84 cited), and no specific restrictions on modes of supply.

In terms of the new labor law, Egypt may need to make specific reservations to preserve ministers' ability to legislate in this area. Rather than leaving a mode of supply unbound, we recommend preserving the horizontal commitment in the existing schedule and not creating new barriers.

Finally, we recommend that Egypt take a more comprehensive approach to WTO negotiations, evaluating the impact of negotiations on the entire IT sector, not just the services sector. Egypt might consider developing a comprehensive and unified approach to all aspects of the WTO affecting Egypt's IT sector, including tariffs, the Information Technology Agreement, e-commerce discussions, GATS, and telecommunications.

Appendix A. Illustrative List of Sectors Covered

WORLD TRADE ORGANIZATION

RESTRICTED

MTN.GNS/W/120

10 July 1991

(98-0000)

SPECIAL DISTRIBUTION

SERVICES SECTORAL CLASSIFICATION LIST

Note by the Secretariat

The secretariat indicated in its informal note containing the draft classification list (24 May 1991) that it would prepare a revised version based on comments from participants. The attached list incorporates, to the extent possible, such comments. It could, of course, be subject to further modification in the light of developments in the services negotiations and ongoing work elsewhere.

SERVICES SECTORAL CLASSIFICATION LIST

SECTORS AND SUB-SECTORS

CORRESPONDING

CPC

1.	<u>BUSINESS SERVICES</u>	<u>Section B</u>
A.	<u>Professional Services</u>	
a.	Legal Services	
b.	Accounting, auditing and bookkeeping services	
c.	Taxation Services	863
d.	Architectural services	8671
e.	Engineering services	8672
f.	Integrated engineering services	8673
g.	Urban planning and landscape architectural services	8674
h.	Medical and dental services	9312
i.	Veterinary services	932
j.	Services provided by midwives, nurses, physiotherapists and para-medical personnel	93191
k.	Other	
B.	<u>Computer and Related Services</u>	
a.	Consultancy services related to the installation of computer hardware	841
b.	Software implementation services	842
c.	Data processing services	843
d.	Data base services	844
e.	Other	
C.	<u>Research and Development Services</u>	
a.	R&D services on natural sciences	851
b.	R&D services on social sciences and humanities	852
c.	Interdisciplinary R&D services	853
D.	<u>Real Estate Services</u>	
a.	Involving own or leased property	821
b.	On a fee or contract basis	822
E.	<u>Rental/Leasing Services without Operators</u>	
a.	Relating to ships	83103
b.	Relating to aircraft	83104
c.	Relating to other transport equipment 83101+83102+	
d.	Relating to other machinery and equipment	83106-83109
e.	Other	
F.	<u>Other Business Services</u>	
a.	Advertising services	871

b.	Market research and public opinion polling services	864
c.	Management consulting service	865
d.	Services related to man. consulting	866
e.	Technical testing and analysis serv.	8676
f.	Services incidental to agriculture, hunting and forestry	881
g.	Services incidental to fishing	882
h.	Services incidental to mining	883+5115
i.	Services incidental to manufacturing	884+885
j.	Services incidental to energy distribution	887
k.	Placement and supply services of Personnel	872
l.	Investigation and security	873
m.	Related scientific and technical consulting services	8675
n.	Maintenance and repair of equipment (not including maritime vessels, aircraft or other transport equipment)	633+ 8861-8866
o.	Building-cleaning services	874
p.	Photographic services	875
q.	Packaging services	876
r.	Printing, publishing	88442
s.	Convention services	87909*
t.	Other	
2.	<u>COMMUNICATION SERVICES</u>	
A.	<u>Postal services</u>	7511
B.	<u>Courier services</u>	7512
C.	<u>Telecommunication services</u>	
a.	Voice telephone services	7521
b.	Packet-switched data transmission services	7523**
c.	Circuit-switched data transmission services	7523**
d.	Telex services	7523**
e.	Telegraph services	7522
f.	Facsimile services 7521**+7529**	
g.	Private leased circuit services 7522**+7523**	
h.	Electronic mail	7523**

* The (*) indicates that the service specified is a component of a more aggregated CPC item specified elsewhere in this classification list.

** The (**) indicates that the service specified constitutes only a part of the total range of activities covered by the CPC concordance (e.g. voice mail is only a component of CPC item 7523).

i.	Voice mail	7523**
j.	On-line information and data base retrieval	7523**
k.	electronic data interchange (EDI)	7523**
l.	enhanced/value-added facsimile services, incl. store and forward, store and retrieve	7523**
m.	code and protocol conversion	n.a.
n.	on-line information and/or data processing (incl.transaction processing)	843**
o.	other	
D.	<u>Audiovisual services</u>	
a.	Motion picture and video tape production and distribution services	9611
b.	Motion picture projection service	9612
c.	Radio and television services	9613
d.	Radio and television transmission services	7524
e.	Sound recording	n.a.
f.	Other	
E.	<u>Other</u>	
3.	<u>CONSTRUCTION AND RELATED ENGINEERING SERVICES</u>	
A.	<u>General construction work for buildings</u>	512
B.	<u>General construction work for civil engineering</u>	513
C.	<u>Installation and assembly work</u>	514+516
D.	<u>Building completion and finishing work</u>	517
E.	<u>Other</u>	
4.	<u>DISTRIBUTION SERVICES</u>	
A.	<u>Commission agents' services</u>	621
B.	<u>Wholesale trade services</u>	622
C.	<u>Retailing services</u>	631+632
D.	<u>Franchising</u>	8929
E.	<u>Other</u>	
5.	<u>EDUCATIONAL SERVICES</u>	
A.	<u>Primary education services</u>	921
B.	<u>Secondary education services</u>	922
C.	<u>Higher education services</u>	923
D.	<u>Adult education</u>	924
E.	<u>Other education services</u>	929
6.	<u>ENVIRONMENTAL SERVICES</u>	
A.	<u>Sewage services</u>	9401
B.	<u>Refuse disposal services</u>	9402
C.	<u>Sanitation and similar services</u>	9403
D.	<u>Other</u>	

7.	<u>FINANCIAL SERVICES</u>	
A.	<u>All insurance and insurance-related services</u>	812**
a.	Life, accident and health insurance services	8121
b.	Non-life insurance services	8129
c.	Reinsurance and retrocession	81299*
d.	Services auxiliary to insurance (including broking and agency services)	8140
B.	<u>Banking and other financial services</u> (excl. insurance)	
a.	Acceptance of deposits and other repayable funds from the public	81115-81119
b.	Lending of all types, incl., inter alia, consumer credit, mortgage credit, factoring and financing of commercial transaction	8113
c.	Financial leasing	8112
d.	All payment and money transmission services	81339**
e.	Guarantees and commitments	81199**
f.	Trading for own account or for account of customers, whether on an exchange, in an over-the-counter market or otherwise, the following:	
	- money market instruments (cheques, bills, certificate of deposits, etc.)	81339**
	- foreign exchange	81333
	- derivative products incl., but not limited to, futures and options	81339**
	- exchange rate and interest rate instruments, inclu. products such as swaps, forward rate agreements, etc.	81339**
	- transferable securities	81321*
	- other negotiable instruments and financial assets, incl. bullion	81339**
g.	Participation in issues of all kinds of securities, incl. under-writing and placement as agent (whether publicly or privately) and provision of service related to such issues	8132
h.	Money broking	81339**
i.	Asset management, such as cash or portfolio management, all forms of collective investment management, pension fund management, custodial depository and trust services	8119+** 81323*
j.	Settlement and clearing services for financial assets, incl. securities, derivative products, and other negotiable instruments	81339** or 81319**
k.	Advisory and other auxiliary financial services on all the activities listed in Article 1B of MTN.TNC/W/50, incl. credit	8131 or 8133

	reference and analysis, investment and portfolio research and advice, advice on acquisitions and on corporate restructuring and strategy	
I.	Provision and transfer of financial information, and financial data processing and related software by providers of other financial services	8131
C.	<u>Other</u>	
8.	<u>HEALTH RELATED AND SOCIAL SERVICES</u> (other than those listed under 1.A.h-j.)	
A.	<u>Hospital services</u>	9311
B.	<u>Other Human Health Services</u>	9319 (other than 93191)
C.	<u>Social Services</u>	933
D.	<u>Other</u>	
9.	<u>TOURISM AND TRAVEL RELATED SERVICES</u>	
A.	<u>Hotels and restaurants (incl. catering)</u>	641-643
B.	<u>Travel agencies and tour operators services</u>	7471
C.	<u>Tourist guides services</u>	7472
D.	<u>Other</u>	
10.	<u>RECREATIONAL, CULTURAL AND SPORTING SERVICES</u> (other than audiovisual services)	
A.	<u>Entertainment services</u> (including theatre, live bands and circus services)	9619
B.	<u>News agency services</u>	962
C.	<u>Libraries, archives, museums and other cultural services</u>	963
D.	<u>Sporting and other recreational services</u>	964
E.	<u>Other</u>	
11.	<u>TRANSPORT SERVICES</u>	
A.	<u>Maritime Transport Services</u>	
a.	Passenger transportation	7211
b.	Freight transportation	7212
c.	Rental of vessels with crew	7213
d.	Maintenance and repair of vessels	8868**
e.	Pushing and towing services	7214
f.	Supporting services for maritime transport	745**
B.	<u>Internal Waterways Transport</u>	
a.	Passenger transportation	7221
b.	Freight transportation	7222
c.	Rental of vessels with crew	7223
d.	Maintenance and repair of vessels	8868**
e.	Pushing and towing services	7224

f.	Supporting services for internal waterway transport	745**
C.	<u>Air Transport Services</u>	
a.	Passenger transportation	731
b.	Freight transportation	732
c.	Rental of aircraft with crew	734
d.	Maintenance and repair of aircraft	8868**
e.	Supporting services for air transport	746
D.	<u>Space Transport</u>	733
E.	<u>Rail Transport Services</u>	
a.	Passenger transportation	7111
b.	Freight transportation	7112
c.	Pushing and towing services	7113
d.	Maintenance and repair of rail transport equipment	8868**
e.	Supporting services for rail transport services	743
F.	<u>Road Transport Services</u>	
a.	Passenger transportation	7121+7122
b.	Freight transportation	7123
c.	Rental of commercial vehicles with operator	7124
d.	Maintenance and repair of road transport equipment	6112+8867
e.	Supporting services for road transport services	744
G.	<u>Pipeline Transport</u>	
a.	Transportation of fuels	7131
b.	Transportation of other goods	7139
H.	<u>Services auxiliary to all modes of transport</u>	
a.	Cargo-handling services	741
b.	Storage and warehouse services	742
c.	Freight transport agency services	748
d.	Other	
I.	<u>Other Transport Services</u>	
12.	<u>OTHER SERVICES NOT INCLUDED ELSEWHERE</u>	95+97+98+99

Appendix B. CPC Categorization of Computer Services

UNCPC	Subcategory	Description
B . C O M P U T E R A N D R E L A T E D S E R V I C E S		
D I V I S I O N 8 4 C O M P U T E R & R E L A T E D S E R V I C E S		
a. Consultancy services related to the installation of computer hardware		
841	8410	84100 <u>Consultancy services related to the installation of computer hardware</u> : assistance services to the clients in the installation of computer hardware and computer networks.
b. Software implementation services		
842		<u>Software implementation services</u> : all services involving consultancy services on, development and implementation of software. The term software may be defined as the sets of instructions required to make computers work and communicate. A number of different programs developed for specific applications (application software) and the customer may have the choice of using ready-made programs off-the-shelf (packaged software), developing specific programs for its requirements (customized software) or a combination of the two.
	8421	84210 <u>Systems and software consulting services</u> : services of a general nature prior to the development of data processing systems and applications. It might be management services, project planning services, etc;
	8422	84220 <u>Systems analysis services</u> : Analysis services include analysis of the clients' needs, defining functional specification, and setting up the team. Also involved are project management, technical coordination and integration and definition of the systems architecture;
	8423	84230 <u>Systems design services</u> : include technical solutions, with respect to methodology, quality-assurance, choice of equipment software packages or new technologies, etc;
	8424	84240 <u>Programming services</u> : the implementation phase, i.e. writing and debugging programs, conducting tests, and editing documentation;
	8425	84250 <u>Systems maintenance services</u> : consulting and technical assistance services of software products in use, rewriting or changing existing programs or systems, and maintaining up-to-date software documentation and manuals. Also included are specialist work, such as conversions.
c. Data processing services		
843		
	8431	84310 <u>Data processing services</u> : or "input preparation services" include data recording services such as key punching, optical scanning or other methods for data entry.

UNCPC	Subcategory	Description
	8432	84320 <u>Data-processing and tabulation services</u> consisting of services such as data processing and tabulation services, computer calculating services, and rental of computer time.
	8433	84330 <u>Time-sharing services</u> : This seems to be the same type of service as 84320. Computer time only is bought; if it is bought from the customer's premises, telecommunications services are also bought. Data processing or tabulation services may also be bought from a service bureau. In both cases the services may also be bought from a service bureau. In both cases the services might be time sharing processed. Thus, there is no clear distinction between 84320 and 84330, noting that computer time only is bought; if it is bought from the customer's premises, telecommunications services are also bought. Data processing or tabulation services may also be bought from a service bureau.
	8439	84390 <u>Other data processing services</u> : consisting of services which manage the full operations of a customer's facilities under contract: computer-room environmental quality control services; management services of in-place computer equipment combinations; and management services of computer work flows and distributions.
d. Database services		
	844	<u>Data base services</u> : all services provided from primarily structured databases through a communication network. Exclusions: "data and message transmission services" which it classifies under telecommunications services (as 7523) and excludes documentation retrieval services classified as library services (as 96311).
e. Other		
845	845000	Maintenance and repair services of office machinery and equipment including computers Repair and maintenance services of office machinery, computers and related equipment
849		<u>Other computer services</u>
	8491	84910 <u>Data preparation services</u> : services for clients not involving data processing services.
	8499	84990 <u>Other computer services</u> n.e.c.: Other computer related services, not classified elsewhere, e.g. training services for staff of clients, and other professional services.
C . (V A L U E A D D E D) T E L E C O M M U N I C A T I O N S S E R V I C E S		
h. electronic mail (7523)		
	7523	Data and message transmission services
		75232 <u>Electronic message and information services</u> Network and related services (hardware and software) necessary to send and receive electronic messages (telegraph and telex/TWX services) and/or to access and manipulate information in databases (so called value-added networks services)
j. On-line information and database retrieval (7523)		
		75231 <u>Data network services</u> Network services necessary to transmit data between equipment using the same or different protocols. This service can be provided via a public or dedicated data network. (i.e., via a network dedicated to the customer's use.)
n. On-line information and/or data processing (including transaction processing) (843)		
843		Data processing services (as noted above)
F. Other Business services; c. Management Consulting Services (865 - General management consulting, financial management consulting, marketing management consulting, human resources, production, public relations, other)		

UNCPC	Subcategory	Description
D . A D U L T E D U C A T I O N		
	924	92400 Adult education services n.e.c. Education services for adults who are not in the regular school and university system. Such education services may be provided in day or evening classes by schools or by special institutions for adult education. Included are education services through radio or television broadcasting or by correspondence. The programs may cover both general and vocational subjects. Services related to literacy programs for adults are also included.
Sound recording and audiovisual services		

Appendix C. IDC Definitions of the Computer Services Sector

Planning

Planning consists of the assessment and evaluation of organizations' needs and operations in order to make decisions regarding their IT strategy and tactics. These activities include process improvement, operations assessment, benchmarking, needs assessment, strategy, capacity planning, change management, maintenance planning, design, and supplier analysis.

Implementation

Implementation refers to the building of technical solutions. At a point in the planning phase of a project, focus turns from concept to the actual building or prototyping of the system and implementation activities start. Much like planning activities, implementation services are delivered as standalone activities or packaged within a larger offering, such as systems integration projects. For example, the installation of a PC would be considered a standalone installation service. However, a systems integration project aimed at building a new data center would include bundling implementation.

Activities in this group include site preparation, project management, test and debug, system configuration, installation, software reengineering, custom software development, packaged software customization, application interfacing and integration, relocation services, systems migration, documentation, and user experience design.

Operations

These activities are aimed at taking responsibility for managing components of a company's IT infrastructure or entire IT function, as in IS outsourcing. Operations

activities include asset management, procurement, administration and operations, media duplication and replication, systems management, performance tuning, network management, backup and archiving, and business recovery.

Maintenance and Support

This group includes activities involved with ensuring that products and systems are performing properly. Support activities include IT telephone support, IT parts support, remote network monitoring, remote diagnostics, electronic support software maintenance, onsite IT maintenance, onsite software support, and preventive IT maintenance.

Training and Education

Training and education enhance knowledge of information technology and expand its use. Training services focus on improving performance or developing new concepts, behaviors, and skills. Training activities include IS/technical skills training, desktop skills training, professional IT certification, and IT learning augmentation.

Appendix D. Sample Computer Services Schedules

Sector or Sub-Sector	Limitations on Market Access	Limitations on National Treatment
CHINA		
B. Computer and Related Services	(1) None	(1) None
a. Consultancy services related to the installation of computer hardware (CPC 841)	(2) None (3) None (4) Unbound except as indicated in Horizontal Commitments.	(2) None (3) None (4) Qualifications are as follows: certified engineers, or personnel with Bachelor's degree (or above) and three years of experience in these fields.
b. Software implementation services (CPC 842)	(1) None	(1) None
- Systems and software consulting services (CPC 8421)	(2) None	(2) None
- Systems analysis services (CPC 8422)	(3) Only in the form of joint ventures, with foreign majority ownership permitted.	(3) None
- Systems design services (CPC 8423)	(4) Unbound except as indicated in Horizontal Commitments.	(4) Qualifications are as follows: certified engineers, or personnel with Bachelor's degree (or above) and three years of experience in these fields.
- Programming services (CPC 8424)		
- Systems maintenance services (CPC 8425)		
c. Data processing services (CPC 843)		
- Input preparation services (CPC 8431)		
- Data processing and tabulation services (CPC 8432)	(1) None	(1) None
- Time-sharing services (CPC 8433)	(2) None (3) None (4) Unbound except as indicated in Horizontal Commitments.	(2) None (3) None (4) Qualifications are as follows: certified engineers, or personnel with Bachelor's degree (or above) and three years of experience in these fields.
CZECH REPUBLIC		
a) Consultancy services related	1) None	1) None

Sector or Sub-Sector	Limitations on Market Access		Limitations on National Treatment	
to the installation of computer hardware (CPC 841)	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in horizontal section	4)	Unbound except as indicated in horizontal section
b) Software implementation services (CPC 842)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in horizontal section	4)	Unbound except as indicated in horizontal section
c) Data processing services (CPC 843)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in horizontal section	4)	Unbound except as indicated in horizontal section
d) Data base services (CPC 844)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in horizontal section	4)	Unbound except as indicated in horizontal section
e) Other (CPC 845 + 849)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in horizontal section	4)	Unbound except as indicated in horizontal section
EUROPEAN COMMUNITY 12				
a) Consultancy Services related to the Installation of Computer Hardware (CPC 841)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section	4)	Unbound except as indicated in the horizontal section
b) Software Implementation Services (CPC 842)	1)	None	1)	None
	2)	None	2)	None

Sector or Sub-Sector		Limitations on Market Access	Limitations on National Treatment
	3)	None	3) None
	4)	Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section
c) Data Processing Services (CPC 843)	1)	None	1) None
	2)	None	2) None
	3)	None	3) None
	4)	Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section
d) Data Base Services (CPC 844)	1)	None	1) None
	2)	None	2) None
	3)	None	3) None
	4)	Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section
Maintenance and Repair (CPC 845)	1)	None	1) None
	2)	None	2) None
	3)	None	3) None
	4)	Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section
e) Other Computer Services (CPC 849)	1)	None	1) None
	2)	None	2) None
	3)	None	3) None
	4)	Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section
HUNGARY			
a) Consultancy services related to the installation of computer hardware	1)	None	1) None
	2)	None	2) None
	3)	None	3) None
	4)	Unbound except as indicated in Part I	4) Unbound except as indicated in Part I
b) Software implementation services	1)	None	1) None
	2)	None	2) None

Sector or Sub-Sector	Limitations on Market Access		Limitations on National Treatment	
	3)	None	3)	None
	4)	Unbound except as indicated in Part I	4)	Unbound except as indicated in Part I
c) Data processing services	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in Part I	4)	Unbound except as indicated in Part I
d) Data base services	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in Part I	4)	Unbound except as indicated in Part I
INDIA				
a) Consultancy services related to the installation of computer hardware (CPC 841)	1)	Unbound	1)	Unbound
	2)	Unbound	2)	Unbound
	3)	Only through incorporation with a foreign equity ceiling of 51 per cent	3)	None
b) Software implementation services (CPC 842)	4)	Unbound except as indicated in the horizontal section	4)	Unbound except as indicated in the horizontal section
c) Data processing services (CPC 843)				
d) Data base services (CPC 844)				
e) Maintenance and repair services of office machinery and equipment including computers (CPC 845)				
INDONESIA				
B. Computer and Related Services				
Software implementation Services (CPC 842)	1)	Unbound for government funded project	1)	Unbound
	2)	Unbound for government funded project	2)	Unbound
	3)	Joint operation through a representative office in Indonesia	3)	The Indonesian participant in joint operation must be member of Indonesian Consultant Association
	4)	Unbound except for director and technical expert	4)	As specified in the Horizontal Measures

Sector or Sub-Sector	Limitations on Market Access		Limitations on National Treatment	
ISRAEL				
a) Consultancy services related to the installation of hardware (CPC 841)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section.	4)	Unbound except as indicated in the horizontal section.
b) Software implementation services (CPC 842)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section.	4)	Unbound except as indicated in the horizontal section.
c), d) Data processing and database services (CPC 843 excluding 84330)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section.	4)	Unbound except as indicated in the horizontal section.
JORDAN				
(a) Consultancy services related to the installation of computer hardware (CPC 841)	(1)	None	(1)	None
(b) Software implementation services (CPC 842)	(2)	None	(2)	None
(c) Data processing services (CPC 843)	(3)	None	(3)	None
(d) Data base services(CPC 844)	(4)	Unbound, except as indicated in the horizontal section.	(4)	Unbound, except as indicated in the horizontal section.
(e) Maintenance and repair services of office machinery and equipment including computers (CPC 845)				
(f) Other computer services (CPC 849)				
KOREA RP				
a) Consultancy services related to the installation of computer hardware (CPC 841)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in ALL SECTORS	4)	Unbound except as indicated in ALL SECTORS
b) Software implementation	1)	None	1)	None

Sector or Sub-Sector	Limitations on Market Access		Limitations on National Treatment	
services (CPC 842)	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in ALL SECTORS	4)	Unbound except as indicated in ALL SECTORS
c) Data processing services (CPC 843)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in ALL SECTORS	4)	Unbound except as indicated in ALL SECTORS
d) Data base services (CPC 844)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in ALL SECTORS	4)	Unbound except as indicated in ALL SECTORS
e) Other (CPC 845, 849)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in ALL SECTORS	4)	Unbound except as indicated in ALL SECTORS
KUWAIT				
a) Consultancy services related to the installation of computer hardware	1)	Unbound	1)	Unbound
b) Software implementation services	2)	Unbound	2)	Unbound
c) Data processing services	3)	None	3)	None
d) Data base services	4)	Unbound except as indicated under horizontal commitments	4)	Unbound except as indicated under horizontal commitments
OMAN				
CPC 841 - 845 & 849	1)	None	1)	None
a) Consultancy services related to the installation of computer hardware	2)	None	2)	None
b) Software implementation services	3)	None; starting no later than 1 January 2003, commercial presence of wholly foreign-owned subsidiaries will be permitted.	3)	None
c) Data processing services	4)	Unbound, except as indicated in the horizontal section.		
d) Data base services				
e) Other			4)	Unbound, except as indicated in the

Sector or Sub-Sector	Limitations on Market Access						Limitations on National Treatment					
horizontal section.												
PAKISTAN												
Consultancy services related to the installation of computer hardware (CPC No. 841)	1)	Unbound					1)	Unbound				
	2)	Unbound					2)	Unbound				
	3)	None					3)	None				
	4)	Unbound horizontal measures	except	as	indicated	under	4)	Unbound horizontal measures	except	as	indicated	under
Software implementation services (CPC No. 842)	1)	Unbound					1)	Unbound				
	2)	None					2)	None				
	3)	None					3)	None				
	4)	Unbound horizontal measures	except	as	indicated	under	4)	Unbound horizontal measures	except	as	indicated	under
Data processing services (CPC No. 843)	1)	Unbound					1)	Unbound				
	2)	None					2)	None				
	3)	None					3)	None				
	4)	Unbound horizontal measures	except	as	indicated	under	4)	Unbound horizontal measures	except	as	indicated	under
Data base services (CPC No. 844)	1)	Unbound					1)	Unbound				
	2)	None					2)	None				
	3)	None					3)	None				
	4)	Unbound horizontal measures	except	as	indicated	under	4)	Unbound horizontal measures	except	as	indicated	under
R&D services on natural sciences (CPC No. 851)	1)	Unbound					1)	Unbound				
	2)	None					2)	None				
	3)	None					3)	None				
	4)	Unbound horizontal measures	except	as	indicated	under	4)	Unbound horizontal measures	except	as	indicated	under
Technical testing and analysis services (CPC No. 8676)	1)	Unbound*					1)	Unbound*				
	2)	None					2)	None				
	3)	None					3)	None				

Sector or Sub-Sector		Limitations on Market Access		Limitations on National Treatment
	4)	Unbound except as indicated under horizontal measures	4)	Unbound except as indicated under horizontal measures
QATAR				
a) Consultancy services related to the installation of computer hardware (CPC 841)	1)	Unbound	1)	Unbound
	2)	Unbound	2)	Unbound
	3)	None	3)	None
b) Software implementation services (CPC 842)	4)	Unbound, except as indicated in the horizontal section	4)	Unbound, except as indicated in the horizontal section
c) Data processing services (CPC 843)				
d) Data base services (CPC 844)				
SINGAPORE				
Computer Services	1)	None	1)	None
The services covered are:	2)	None	2)	None
- Software development	3)	None	3)	None
- Systems Integration Services				
- Data processing	4)	Unbound except as indicated in the horizontal section	4)	Unbound
- Data base services				
Telecommunication-related services are excluded (See Value-Added Network (VAN) services)				
SOUTH AFRICA				
a) Consultancy services related to the installation of computer hardware (CPC 841)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section	4)	Unbound except as indicated in the horizontal section
b) Software implementation services (CPC 842)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section	4)	Unbound except as indicated in the horizontal section

Sector or Sub-Sector	Limitations on Market Access		Limitations on National Treatment	
c) Data processing services (CPC 843)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section	4)	Unbound except as indicated in the horizontal section
d) Data base services (CPC 844)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section	4)	Unbound except as indicated in the horizontal section
e) Maintenance and repair services of office machinery and equipment including computers (CPC 8450)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound except as indicated in the horizontal section	4)	Unbound except as indicated in the horizontal section
THAILAND				
a) Consultancy services related to the installation of computer hardware (CPC 84100)	1)	Unbound	1)	Unbound
	2)	None	2)	None
	3)	None other than that indicated in the horizontal section	3)	No limitations as long as foreign equity participation does not exceed 49 per cent
	4)	As indicated in the horizontal section	4)	None
b) Software implementation services (excluding programming and systems maintenance services) (CPC 84210+84220 +84230)	1)	Unbound	1)	Unbound
	2)	None	2)	None
	3)	None other than that indicated in the horizontal section	3)	No limitations as long as foreign equity participation does not exceed 49 per cent
	4)	As indicated in the horizontal section	4)	None
c) Data processing services (excluding those provided over public telecommunications network) (CPC 84310+84320 +84330+84390)	1)	Unbound	1)	Unbound
	2)	None	2)	None
	3)	None other than that indicated in the horizontal section	3)	No limitations as long as foreign equity participation does not exceed 49 per cent
	4)	As indicated in the horizontal section	4)	None

Sector or Sub-Sector	Limitations on Market Access		Limitations on National Treatment	
d) Data base services (excluding those provided over public telecommunications network) (CPC 84400)	1)	Unbound	1)	Unbound
	2)	None	2)	None
	3)	None other than that indicated in the horizontal section	3)	No limitations as long as foreign equity participation does not exceed 49 per cent
	4)	As indicated in the horizontal section	4)	None
TURKEY				
B. Computer and Related Services				
a) Consultancy services related to the installation of computer hardware (CPC 841)	1)	#5 None	1)	None
	2)	None	2)	None
	3)	#5 None	3)	None
b) Software implementation services (CPC 842)	4)	#5 None	4)	None
c) Data processing services (CPC 840)				
USA				
B. Computer and Related Services (MTN.GNS/W/120 a) - e), except airline computer reservation systems)	1)	None	1)	None
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound, except as indicated in the	4)	None
VENEZUELA				
B. Computer and Related Services (CPC Division 84)	1)	None, only legal representation required	1)	None, only legal representation required
	2)	None	2)	None
	3)	None	3)	None
	4)	Unbound, except as indicated in the horizontal section	4)	Unbound, except as indicated in the horizontal section